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The King's Cup Race

WHEN the regulations for the 1935 King's Cup Air Race were first made known last March many prophesied that they would reduce the number of entries to an absurd extent because, it was argued, they offered no certainty that a competitor who did well in the eliminating contest would get into the actual race. This has not, however, proved to be the case. When the entry list closed last week, thirty-six machines had been entered for the race. Last year there were forty-one competing machines, so the competition rules cannot have been responsible for any very large drop in the number of entries.

This year's regulations are of a somewhat hybrid nature, in that on the first day of the race (Friday, September 6) competitors will be sent off on a flight of nearly 1,000 miles around England and Scotland, and just touching Ireland on the way. The twenty aeroplanes which put up the best speeds during this circuit will pass into the actual race on the following day. The course for the final is to be a short one, and is to be covered seven times. It is, of course, to be a handicap, and the handicap allowances will be calculated beforehand, and will not be adjusted in accordance with the performance put up during the first day's flying.

At first sight one might assume that a circuit of Britain, in which competitors go as they please in the way of speed, merely landing at a few controls for checking purposes, and rounding a few prescribed turning points, would rob the flight of any resemblance to a race. This, however, is not so. In order to give the slower machines a chance, competing machines will be divided into two classes, those with engines totalling less than 150 h.p., and those with more than that power, and the fastest ten in each class will be admitted to the race.

A competitor will not know exactly how well others in similar machines are doing, and he will not, therefore, dare to throttle back his engine very much. There

is always the fact to be kept in mind that a flight around the British Isles requires airmanship of a fairly high order, and a pilot who is a good navigator, or who carries a good navigator, may well make up for a deficiency of several miles per hour in the actual still-air speed of his machine. Obviously, if ten 230 m.p.h. "Comets" had been entered, and if the next fastest type had been capable of but 160 m.p.h., it would be almost a foregone conclusion that the "Comets" would all go into the final race, but the speeds of the machines actually entered do not differ by nearly so wide a margin, and good course-keeping may easily cause several surprises. Then there is the fact that speed will be judged on lapsed time, *i.e.*, the time spent in refuelling will count as flying time. Smartness in filling up may add considerably to the virtual speed of a competing machine.

Thinning the Field

It is understood that the intention is to send the fast machines off first in order to get competitors strung out along the course, thus avoiding congestion at controls and bunching at turning points. This will, of course, mean that not until the last man has completed the circuit can it be known which ten in each class are to go into the final. Thus visitors to the aerodromes at which competitors must land will not be able to form any idea of which is doing well and which is not, and this may rob the event of a good deal of interest, and may result in small attendances. We think, however, that the Royal Aero Club has been wise in not laying too much stress on popular interest. In the past, the general public has not trooped to the King's Cup Air Race in stupendous numbers.

Perhaps the idea behind this year's regulations may be summed up by saying that the first day's flying is intended to be a test of airmanship and navigation, while the second day's racing calls upon the best speed from every machine, and demands a different technique of piloting, so that several qualities in man and machine will be necessary for success.

Two Committees

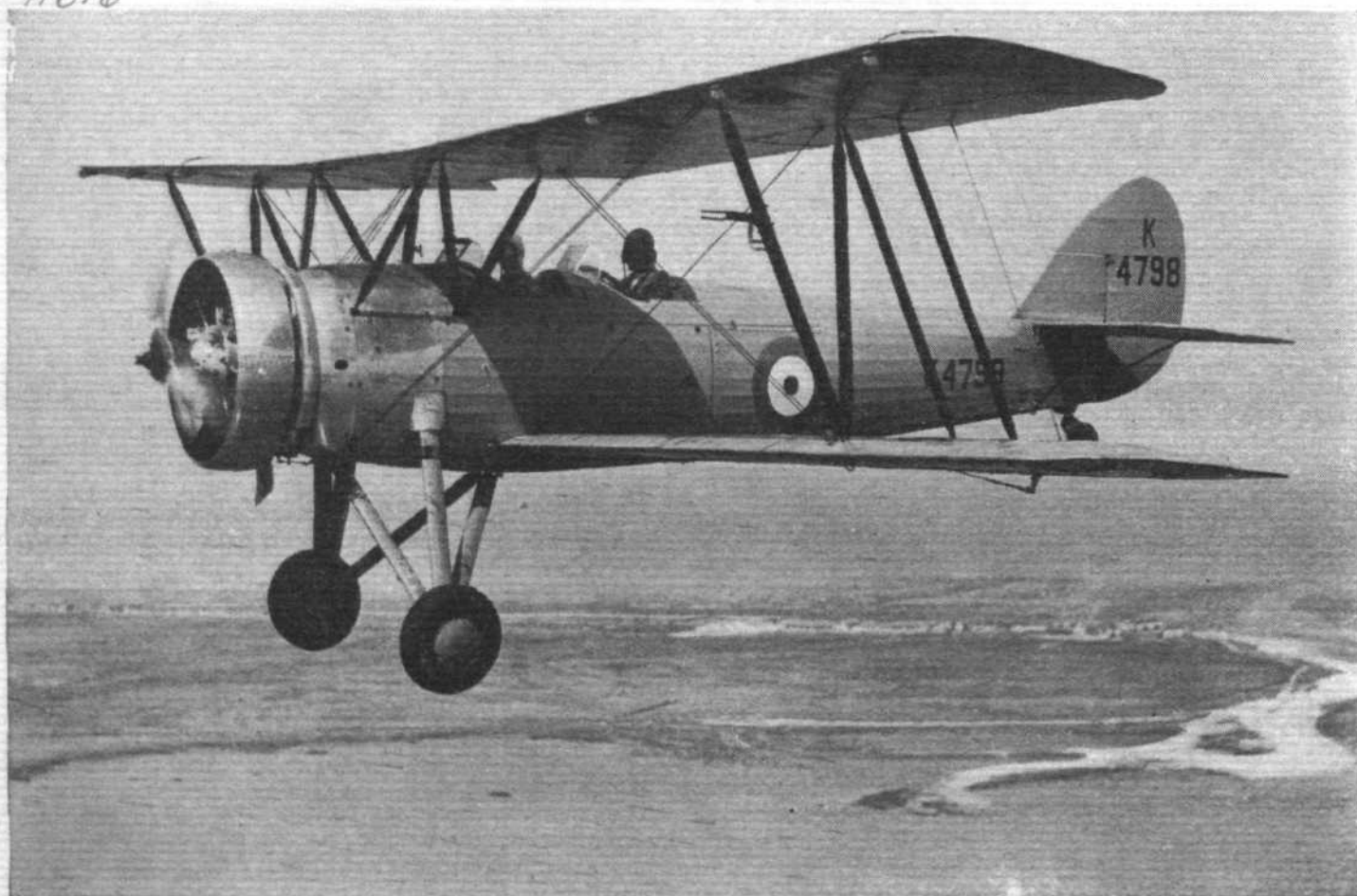
HIS MAJESTY'S Government has recently appointed two committees to advise on the development of civil flying. One is a standing committee under the chairmanship of Sir Warren Fisher to consider questions of international air communications which affect more than one department of Government, and the other is a committee, not described as a standing committee, under the chairmanship of Sir Henry Maybury, to consider and report upon measures which might be adopted by the Government or by local authorities for assisting in the promotion of civil flying in the United Kingdom, and their probable cost. This second committee is to take into account the requirements of the Post Office for air mails and the relations between flying and other forms of transport. The Air Minister, Sir Philip Cunliffe-Lister, has stated that there is no limitation whatever on the range of activity or research or recommendation of these committees.

The Warren Fisher Committee has been in existence now for some two months, and it is understood that one of the first matters to be considered by it is the Atlantic air route. There is, however, something mysterious about this committee. The names of its members have not been published, and they seem to be regarded as an official secret. As the functions of the committee are concerned with civil flying and not with the Air Force, it does not seem probable that a possible foreign enemy would be in a much stronger position if he did discover who the members of the committee are. It is, however, interesting to see a sort of Government standing com-

mittee considering the question of an Atlantic air service. Hitherto most people have regarded that as mainly a technical problem, and have thought that until the appropriate type of aircraft had been evolved there would be no need for Government departments other than the Air Ministry to take any interest in the matter.

The Warren Fisher committee would apparently be at liberty also to suggest such modifications of the International Air Convention as would make air travel from one country to another a much easier affair than it is now. As regards Empire air communications, the time certainly is approaching when more than one department of Government ought to have a say in the laying down of air services and providing subsidies for them. It would be very wrong to suggest that the War Office or the Admiralty might prefer one civil air route to another, but the Dominions Office, the Colonial Office, and the Post Office may well desire to have a say before one route or another is sanctioned for subsidy.

The Maybury Committee has only just been appointed, and the names of its members are published on another page. It is evidently the Government's answer to the request put forward by several parties for a body to co-ordinate internal air route plans. Executive action will presumably be taken where necessary by the Civil Aviation Department of the Air Ministry, but advice from an advisory committee which includes representatives of the Post Office, Treasury, Ministry of Transport, and Ministry of Health, will naturally be of the utmost service to the Air Ministry. It is to be hoped that the work of this committee will lead to an ordered, as opposed to a haphazard, development of internal air lines and co-ordination with surface transport.



INSTRUCTOR AND PUPIL : An Avro "Tutor" of the Oxford University Air Squadron flying along the Kentish coast, with Whitstable in the background. (*Flight* photograph.)

The Outlook

A Running Commentary on Air Topics

Designing for a Purpose

NOW that commercial aviation is definitely coming into its own and the air line operator is becoming a useful customer of the aeroplane manufacturer, machines are being designed from the start to take all the equipment that is necessary. Nevertheless, the unfortunate pilot is not yet, perhaps, being considered to quite the extent that he should be. The safety of a service often depends on the comfort and careful layout of his equipment.

Last week we came across a machine which, though conceived several years ago, was designed entirely for commercial operation—with the most inadequate equipment and with no provision for modifications.

With blind, or almost blind, approaches being carried out at so many aerodromes, a fixed aerial should be a *sine qua non*. Space should be allowed behind the dashboard for the fitting of special instruments according to the whim of an operator's chief pilot—who, after all, is the man to be considered. No radio equipment, except in the case of comparatively small machines, should be fitted in the cabin. In the particular machine mentioned this equipment was so weakly fitted that it fell out on the first heavy landing; a method of dealing with a fixed aerial had to be properly thought out; and a special pair of instruments had to be mounted in front of the dashboard because the structure in the nose left no space behind the standard board.

The commercial machine of the future will need a built-in radio, a fixed and a trailing aerial, two types of blind-flying instrument groups, and, possibly, both an automatic pilot and short-wave blind-landing instruments. Even if the machine, as sold, cannot possibly be so fully equipped, allowance will need to be made for all manner of additions, and these additions will need to be conveniently placed if the pilots are to be in full control of all situations.

On the Tick

LAST Friday, while waiting at Bristol Airport, a member of the staff of *Flight* observed an excellent example of how air lines should be run. Three machines were scheduled to arrive at 5.55 p.m., but, bearing in mind the present lack of ground facilities in England, no one would have been surprised if they did not do so to time. However, at 5.54 p.m. a Crilly "Dragon" from Leicester, an R.A.S. "Rapide" from Birmingham and a Western "Dragon" from Cardiff all converged on the airport, and, as they landed, the Western Airways bus from Bristol City drove up to the tarmac ready for the passengers.

Biplanes Still

THERE have been monoplanes in the majority of Air Ministry competitions for many years past. Again and again they have been defeated by biplanes, yet the tendency toward monoplanes for practically every military requirement has become more and more pronounced abroad.

Obviously British designers regard the military monoplane with far greater favour than was the case but a few years back. Certain formidable bugbears have been conquered. "Monoplane" no longer implies an aeroplane with an abnormally poor ratio of gross to tare weight;

experience with filleting the junction of wings and fuselage is now available, and blanketing of the tail surfaces does not present the terrors it once did.

With the advent of the very fast bomber, of course, more consideration must be given to speed in the design of fighters, and there has been a very noticeable hankering after monoplanes on this account. However, while single seats and fixed guns are retained, manoeuvrability must not be neglected, and, with the adoption of heavier armament, structural lightness is a first consideration; therefore the biplane is proving hard to supplant.

The Gloster F.7/30—the very latest fighter to be ordered for service in the Royal Air Force—is a biplane, and it certainly seems that a standard monoplane fighter is still a good distance in the future. Mr. Folland has proved that the speed of a highly efficient biplane is still very close to that of a comparable monoplane.

It is probable, however, that the majority, if not all, 300 m.p.h. fighters which will be flying before many months have passed will almost certainly be monoplanes; but it is not, apparently, in the fighter class alone that the monoplane will shine the more brightly, as the "New and Experimental" park at the R.A.F. Display seemed to indicate.

To and From Airports

FLYING saves a great deal of time but, as we particularly noticed during a recent trip round the south of England, much of that time may be wasted by the difficulty of getting to towns from airports after arrival. At some airports buses and trams run fairly close by, at others there is an airport bus, but at many one has to get a taxi—an expensive proceeding—or rely on the good nature of someone with a car.

Airport authorities who wish to encourage private owners to visit them should provide a car which could take passengers at a purely nominal charge to the nearest town or regular bus stop; it would pay them from every point of view and help the owner to use to the full the speed of air travel. Waiting about at an airport for the chance of a lift or an infrequent bus soon makes people fed up with flying.

Those Newspapers

ACCIDENTS to aircraft have been splashed all over the sheets of daily newspapers for the past two or three weeks. A superficial perusal of these "dressers-up" of news would make anyone think that aeroplanes did nothing else except crash. Even the most ordinary forced landing, with no more damage than a few squashed blades of grass, is called a crash, and photographs are published showing the "remains."

People are not allowed to know about the thousands of miles which are flown every day and the thousands of passengers who are carried without even the slightest incident. Just as an example, because military flying is admittedly far more dangerous than civil flying, and is therefore better for our purpose, let us quote the fact that 356 aircraft which took part in the recent Air Exercises flew a total of some 4,000 hours, mostly at night and often in fairly bad weather, a distance of about 400,000 miles being covered. During this time one man was a little bruised in a forced landing!



THE PARACHUTE

THE all-too-common conception of the parachute is a sort of unreliable aerial life-belt *cum* stunt apparatus—a flimsy straw for the airman to clutch in an emergency. In actual fact, it is one of the greatest boons conferred upon those who fly—a safe resort when things go wrong in the air.

Perhaps it is superfluous to explain that the word parachute is derived from the Latin *parare* and the French *chute*. Thus it is a "guard against a fall."

It is believed that at the beginning of the fourteenth century the Chinese were experimenting with parachutes, and the notebooks of Leonardo da Vinci contain references and sketches indicating the interest of that versatile genius. One Fausto Veranzio, in 1617, described his idea of a parachute and possibly made a jump. About 180 years later Joseph Montgolfier, of fire balloon fame, and his contemporary, Blanchard, conducted experiments. Although both are reputed to have jumped with their products, it was Sebastien Lenormand who made the first leap of which there is accurate record. This was in 1783, when, in order to demonstrate the possibilities of the parachute for rescue work from burning buildings, he stepped from the tower of Montpellier Observatory.

Then followed a large number of experiments, some highly amusing, some deeply tragic, and others merely of academic interest. Perhaps one of the most amusing was that of a young Mr. Arnold, who was carried up in a "flyaway" balloon from a field close to the present site of *Flight's* offices. The balloon burst, and Arnold fell towards the Thames, near Rotherhithe. As he fell the balloon envelope bellied out sufficiently to save his

Some Notes on the History, Development, and Modern Use of a Safeguard of Inestimable Value

Part I

By H. F. KING

life, acting as a parachute. The story goes that immediately after his escape he proceeded to knock into the river five roughs who tried to plunder the wreckage.

But success was as elusive as is accurate information on the early efforts of these pioneer parachutists. For example, there is some doubt if a certain Mr. Murray really did leap from a Portsmouth church tower in 1790, but it is certain that in 1797 Jaques Garnerin jumped from a balloon in Paris. Five years later he came to London, ascending

8,000ft. in a balloon from St. George's Parade, North Audley Street, Grosvenor Square, to make the first successful parachute descent in England.

It appears that the first emergency jump was made by a Pole over Warsaw in July, 1808. He was forced to abandon a fire balloon which became too fiery. His parachute landed him safely.

Robert Cocking, in 1837, rose in a balloon from Vauxhall Gardens and dropped to his death from 5,000ft. His inverted, rigid-framed, conical parachute crumpled, and he became detached from the canopy. "Good night, Mr. Spencer. Good night, Mr. Green," he had said to his comrades as he left the basket.

There are tales galore which could be told of the men who have leaped in the last twenty-five years to help bring the parachute to its present state.

Although the first parachute drop from an aeroplane was made by Capt. Berry, an American, in 1912, years were to pass before military pilots were to be issued with parachutes as standard equipment. It was from observation balloons under fire that parachutes were employed during hostilities. The Spencer type, in service

with the R.F.C. by 1915, was packed in a conical container and hung from the side of the balloon basket. Actually, the Spencer was produced later in various forms; a spherical-shaped pack was made for airship use, while for employment from the smaller airships and from aeroplanes a seat pack was developed. The Mears and the Calthrop "Guardian Angel" were other outstanding British types. For several years after the war this latter was used for exhibition work, by the plucky Miss June among others. As an example of its efficiency one might quote the drops from Tower Bridge (153ft.) by Major T. Orde Lees and Lt. A. E. Bowen in November, 1917. It was not until July, 1918, that an Allied aeroplane pilot made an emergency jump. A large percentage of the number of airmen whose lives might have been saved had they been provided with parachutes leaped from their blazing and disintegrating machines to certain death. A grim procedure, and expensive in man-power.

Automatic Operation

Germany used the Kathe Paulus, Heinecke and Fokker types; the Caquot, Ors and S.T.A. were representative of French examples. In the main, war-time parachutes were of the attached, or automatically operated, type. The parachute container was fixed to the side or bottom of the machine, and a length of static line was led from it to the harness on the airman. When the latter leaped the line pulled the canopy from the container. One of the main disadvantages of the automatic type of parachute is the danger of the shroud lines becoming entangled in the aircraft structure, particularly if the doomed machine is not on a level keel at the moment of the jump. Should the machine shed its wings it would drop at such a rate that no pull could be exercised on the parachute. In certain other types the canopy was attached to the parachutist instead of to the aircraft, but the static line was retained.

It was not until the early post-war days that important strides were made toward the manually operated parachute as we know it to-day. America probably realised more than did any other nation the need for an efficient standard pattern. Examples of nearly every known type of parachute were acquired and tested, and the submission of any new design was invited.

Eventually a parachute was accepted as standard equipment. It was the product of a youth then known to his friends as "Ski-Hi" Irvin, and to-day as Mr. Leslie Irvin, founder of the Irving Airchute Company, the products of which are probably the best-known parachute in the world. Irvin's parachute was still in the automatic class, although the canopy was stowed in a pack on the parachutist's back, being pulled into action by a static line fixed at its upper end in the cockpit.

Although in all his jumps up to that time Irvin had depended on a static line to operate his parachute, he realised full well the limitations of that method of operation. He visualised a completely self-contained unit which would be operated by the hand of the user when well clear of the machine. His early work as a high diver had proved to him that dropping through space did not render a man unconscious (as was popularly supposed) nor even fluster him to such an extent that he was unable to operate a rip-cord. But he had great difficulty in convincing the authorities of the soundness of his theory, though they admitted

that something better than the automatic type was required.

So Irvin, before a party of Government officials, went up in an aeroplane to 2,000ft., wearing what may be regarded as the basic design of the Irvin parachute as we know it to-day. It was a back-pack type; that is to say, the canopy was contained in the pack which the wearer carried strapped to his back, and the parachute was released from its container by means of a rip-cord. This was essentially a length of cable terminating at one end in a large metal ring, and at the other in wires passing through eyes and holding the container together. Thus, when the ring was pulled the pack flew open—actually it was assisted by elastic—allowing the parachute to escape into the airstream, which would balloon it out.

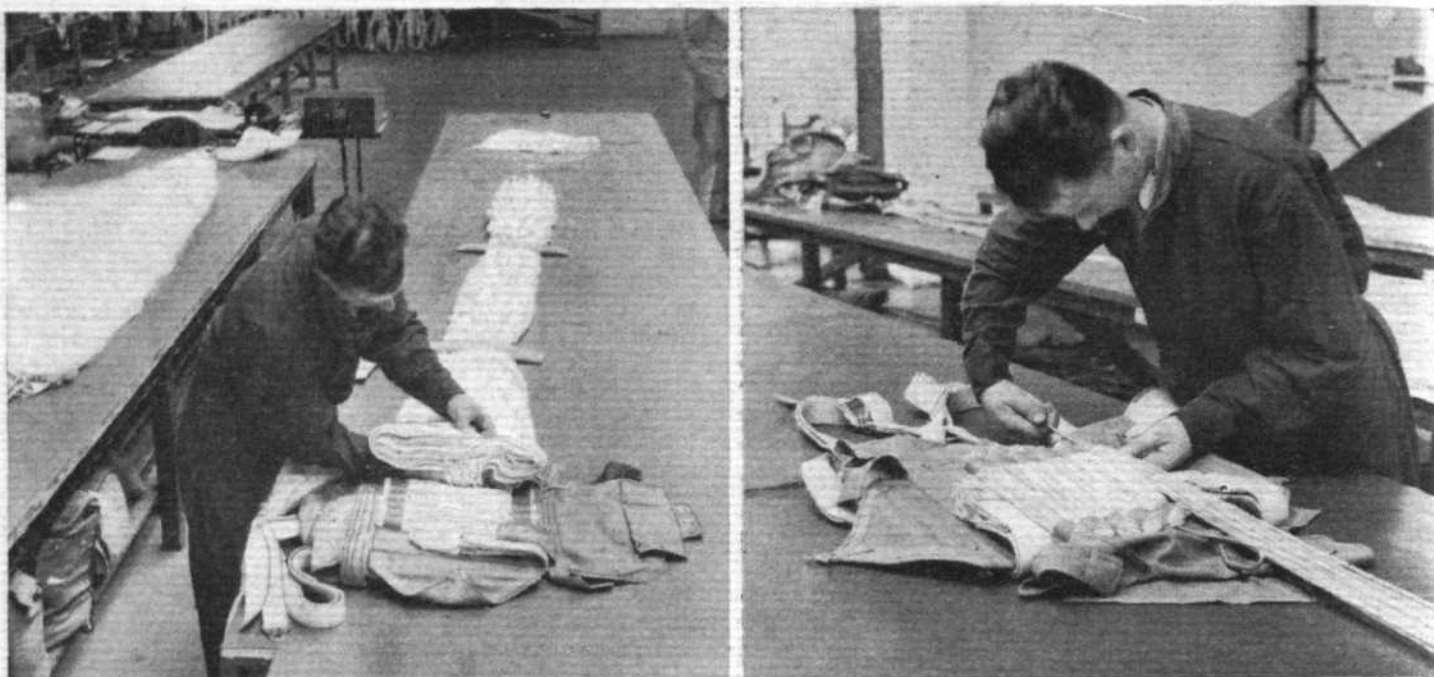
Irvin jumped with his parachute. The drop was a complete success, and a contract was placed for a number of examples of the parachute for issue to the U.S. Army Air Corps. The first emergency drop with an Irvin was made by William O'Connor on August 24, 1920, at McCook Field, Ohio.

Subsequently, the International Caterpillar Club was formed by the Irvin Company. Membership of this select body is confined solely to those who have saved their lives in an emergency with Irvin Air Chutes. To date, the roll of membership bears over one thousand names of military pilots (the Irvin has been adopted by the majority of the greatest Air Forces), commercial and private airmen, and test pilots. Since 1925, when the parachute was taken up by the British Air Ministry and issued as standard equipment, over 130 lives have been saved in the R.A.F. The emblem of membership of the Caterpillar Club is a golden tiepin in the form of a caterpillar. Col. Charles Lindberg, incidentally, has saved his life by parachute four times.

Obviously, the parachute is more widely used in mili-



A pull-off drop: the camera has caught the canopy before it has completely left the pack, a portion of which is seen above the parachute. (Flight photograph.)



(Left) Packing an Irvin parachute at the R.A.F. Parachute Section, Henlow. The shroud lines have been tucked away and shot bags are placed across the canopy to keep it under control. (Right) Stowing the shroud lines. (Flight photographs.)

tary aviation than in commercial flying. Close formation work, aerobatics and combat practice, in addition to fires and structural failures, have added their quota of names to the list of Caterpillars. But commercial aviation is not comparable. Structural failure may, for all practical purposes, be ruled out of the question. Collision and fire are, to put it mildly, highly improbable. At present, so far as is known, no air line supplies parachutes for its passengers, although the French Government is said to be encouraging the development of parachutes for use in conjunction with some form of quick exit cabin.

One dare not guess at the number of passengers which would jump in an emergency. There are those who maintain that every person would leap, while others say that but a very few of those on board would muster the courage. Completely detachable cabins, which would be lowered by a giant parachute, have been suggested. Another proposed solution is a cabin with collapsible walls or floor used in conjunction with some means under the control of the pilot for ejecting the travellers whether or not they wish it. Already parachutes are being unobtrusively fitted in the seats of some privately owned cabin aeroplanes.

Outsize Parachutes

A number of experiments have been conducted in America with large parachutes capable of lowering complete aeroplanes, but it seems that, although aircraft have actually reached the ground in safety by these means, all hope of producing apparatus of a really practical nature has been abandoned. As a matter of interest the huge 65ft. Russell parachute might be mentioned. This landed quite a large machine at the expense of a broken undercarriage; the pilot who took it up "bailed out" with his own parachute after releasing the large canopy. The Irving Company has also done a considerable amount of work with extra-large parachutes. It would seem that the main disadvantage is that the canopy can be released only when the machine is under control.

Obviously, the testing of parachutes is a factor of paramount importance in their development. The Parachute Section of the Home Aircraft Depot, at Henlow, in Bedfordshire, might be termed the Martlesham for parachutes. To Henlow are sent not only parachutes of every new pattern, British and foreign, but every parachute ordered by the Air Ministry for Service use.

These latter, which, as already stated, are Irvins, are

received from the maker's factory at Letchworth, but a few miles distant from Henlow, packed for "test only."

From each pack are removed the rip-cord and its housing, and, should the parachute be of the seat-pack type, the small cushion, as these are not essential to the operation of the parachute during the test drop and might sustain damage on landing. The new parachute, be it of the observer's "quick connector" type or of the seat-pack variety, is fitted to a specially shaped iron dummy weighing about 200 lb. and embodying a kind of suit designed to protect the webbing harness. It is then placed on a trolley with others to be tested, and the batch is delivered to the Parachute Flight, resident in a near-by hangar.

For normal test dropping this unit employs Vickers "Virginia" twin-engined heavy bombers provided with recesses in the fuselage, allowing the release of eight parachutes. By this time temporary rip-cords have been inserted in the packs and these are attached to static lines, which release the canopies when the dummies are dropped over the aerodrome. On reaching the ground the 'chutes are collected and taken to the drying room (the temperature of which is never allowed to fall below 65 deg.), where they are hung for twenty-four hours. Next day they are inspected. Each parachute is extended on a 40ft. table for examination by an inspector and his assistant. Each "gore" or segment of the canopy is examined separately; the periphery and apex receive special attention. Rigging lines, the pilot or auxiliary 'chute, and the pack and harness are then scrutinised for any defects.

Occasionally, owing to a dummy falling on the parachute, a damaged rigging line may need replacement, or a small tear may need repair; the work is performed by the Parachute Section. Should extensive damage be sustained during test, the 'chute is returned to Letchworth for repair and is drop-tested and inspected once more at Henlow. If necessary, however, Henlow could make repairs of any magnitude. During a recent visit the writer saw a complete "gore" being replaced.

Before despatch to a Service unit each canopy is folded into its pack. It is not, however, packed ready for use, but tied with string so that on arrival at its destination it may be examined once more before being put into service. Each R.A.F. station, incidentally, is provided with its own parachute room, with facilities for hanging and packing.

An example of nearly every new type of parachute, British and foreign, is taken to Henlow for experiments.



(Left) Personnel of the Parachute Section at Henlow loading a truck with parachutes attached to 200 lb. dummies. They will be taken over to the Parachute Flight for drop-testing. (Right) Two of the 40ft. packing tables. Note the "pilot" chute at the apex of the parachute in the foreground. (*Flight* photographs.)

After a preliminary inspection a normal test drop is made with a standard 200 lb. weight attached. On the successful completion of this test it is tried again with an additional 100 lb. of weight at a speed of 150 m.p.h. A Fairey two-seater is usually employed for this work. If the new parachute proves that it is able to stand up to this second test it is given a final drop from the Fairey during a dive at between 150 m.p.h. and 180 m.p.h., and carrying a 400 lb. dummy.

Very few "live" drops, even of the pull-off variety, are made at Henlow these days. The pull-off, or lift-off, as it is sometimes known, is familiar to visitors to former Hendon displays. It is made from a small platform built against an outboard interplane strut on a "Virginia." The parachutist stands on this platform, clasps the strut, and, when over the aerodrome, at a signal from someone in the machine, pulls the rip-cord. Flying from its container, the canopy meets the full force of the airstream, bellies out to its maximum extension, pulls the wearer from the machine, and settles down to a normal descent. It is no use for the victim to reconsider his decision after having pulled the ring—a 28-foot canopy and a 90 m.p.h. airstream listen to no arguments or exhortations.

For these pull-off drops a training-type outfit which embodies a back pack containing a 28ft. canopy and a smaller container with a parachute 6ft. smaller in diameter which is carried on the chest, are employed. This latter is a reserve, and may be used in addition to the main canopy for purposes of spectacle or in an emergency.

In an emergency the airman leaves his machine as best he can; ease of exit is given careful consideration in the designing of modern military aeroplanes. After leaving his machine the parachutist, with his right hand on the rip-cord ring, should he be using a conventional parachute, waits until he is well clear for fear that the shroud lines and canopy should become entangled in some part of the aeroplane. Due to the varying rapidity of different people's counting, the old advice about counting three before pulling the rip-cord is no longer heeded. Some men, it is said, count ten times as fast as others.

A smart tug on the rip-cord and the little pilot parachute literally leaps from the pack (it is positively opened by a spring frame), pulling the main canopy, which fills out with amazing rapidity, away from the parachutist. Without this pilot parachute the main canopy would still open effectively but closer to the body.

It is possible, to a certain degree, to control the direction in which the parachute falls by manipulating the shroud lines. Those lines facing in the direction in which

the airman wishes to travel are pulled, thus deforming the shape of the canopy and "spilling" some of the air from it on the opposite side. Immediately on the release of the lines the parachute assumes its normal rate and direction of descent. Pulling on the shroud lines also helps to damp out oscillation.

At the moment of impact with the ground the parachutist, hanging limp in his harness, endeavours to spill the air from the canopy in order to prevent himself being dragged along the ground should there be a wind. Much has been written about the correct method of landing with a parachute, but it is difficult to make hard-and-fast rules. The parachutist must adapt himself to the circumstances of the landing. It is all a matter of common sense. The actual shock of landing is roughly equal to that experienced by jumping from a height of ten or twelve feet.

Exhibition Work

In the early days the parachute was regarded chiefly as a means of entertainment. To-day it is still employed for exhibition work, and certain private owners are continually making jumps for "fun." It is a fact that some well-known parachutists, popularly regarded solely as "stunt merchants," have provided much useful information for the use of parachute manufacturers.

This is particularly true of those who have made delayed drops. Besides providing thrills, these drops, which, of course, entail leaving the parachute unopened for some distance, have their practical uses. In time of war, for example, it might be desirable for an airman after leaving his machine to delay opening his parachute until he is well clear of dog-fighting aeroplanes and enemy fire.

The world's record for the delayed parachute jump is held by the late John Trantum, who, in 1933, fell 17,250ft. in one minute 27 seconds with an Irvin parachute before pulling the rip-cord.

It is only during the past few years that accurate information on the speeds attained by falling bodies has been available. Tests made with a 180 lb. dummy similar in size and shape to a man, with a dummy parachute attached, revealed that a man of average weight reaches a terminal velocity of not more than 175ft. per second, or 119 m.p.h. It was found also that the oscillation during the descent reduces the speed to about 160ft. per second, so it follows that a human figure, which tends to oscillate more than a dummy, will have a terminal velocity somewhat lower than that figure. Probably it is in the region of 110 m.p.h.

(To be concluded.)

THE FOUR WINDS

ITEMS OF INTEREST FROM ALL QUARTERS

After the Invisible Man . . .

Rumour has it that a "mystery ray" which is able to detect the presence of hostile aeroplanes and ships within a fifty-mile radius is being tested near New York.

Aerial O.T.C.s?

At Highgate School speech day Dr. J. A. H. Johnson, the headmaster, appealed for the inclusion of air squadrons in the senior grades of public schools officers' training corps.

A Blind Landing Award

The Collier Trophy has been awarded to Capt. Albert F. Hegenberger, for his work in perfecting blind-landing and blind-flying systems based on the use of the Fairchild-Kruesi "radio compass."

A Rum Affair

It is thought that the two shots which were fired at the U.S. Navy airship ZMC-2, off Point Pleasant, Long Island, came from rum runners who believed the airship to be watching their movements.

A "Kestrel" Eyes Car Records

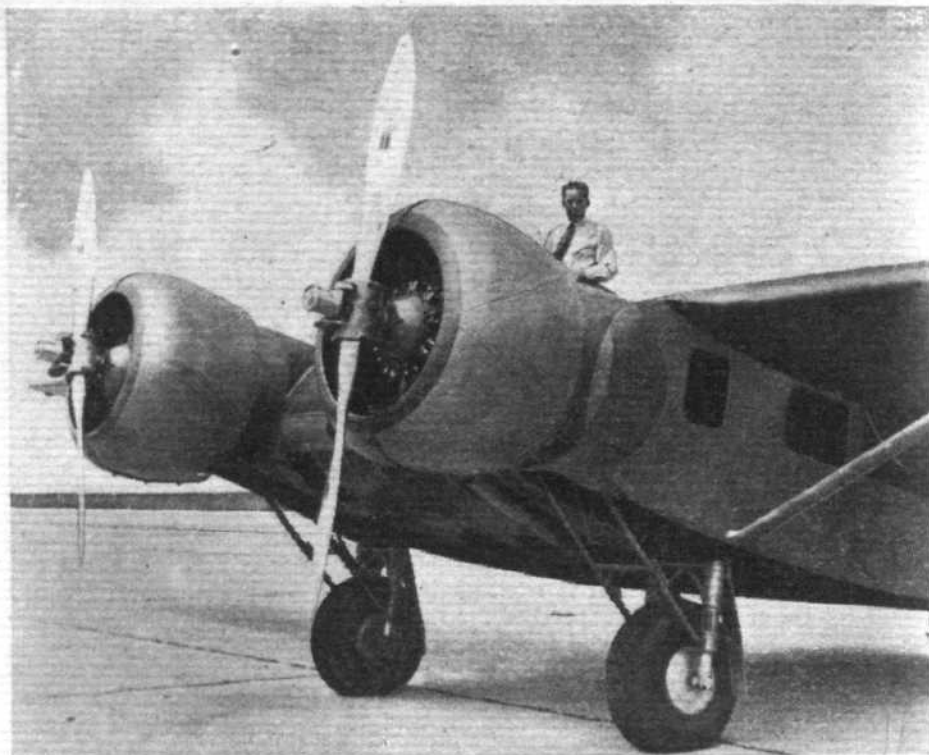
Mr. George Eyston's new racing car, which he is soon to take on a record-hunting trip to America, has an unsupercharged Rolls-Royce "Kestrel." The car will not normally require more than 400 h.p., so there should be ample reserve power.

Soviet Sport

Crack Soviet parachute jumpers are taking part in a meeting, at Tushino, of parachutists from every part of the Union. The event, which will continue until next Thursday, includes night jumping, delayed drops and jumping by groups of parachutists.

Anti-plague

In collaboration with authorities in the North-West Frontier Province, R.A.F. aeroplanes have conveyed 500 doses of anti-pneumonic plague vaccine from Raisalpur to Gilgit, whence they were taken to Kashgar, in Chinese Turkestan, where the plague was rife.



CLYDE PANGBORN with the new Burnelli fourteen-passenger U.B.14 transport. With two Pratt & Whitney "Hornet" engines, a cruising speed of over 200 m.p.h. is claimed.

Exports Soar

In the first six months of this year the value of aircraft material (excluding magnetos) sent abroad was £1,486,950. This was £584,630 more than in the corresponding period last year. It exceeded the amount for the whole of 1933. Engines, of course, formed a large part of the total.

Twenty-five Years Ago

From *Flight* of August 6, 1910.

"A remarkable step forward was made on Monday last at Mourmelon, when Mr. Henry Farman, on a biplane of his No. 11 type, carried three passengers . . . for 1 hr. 4 min., the total weight carried, including passengers, oil and petrol, being 285 kilos."

Stratosphere Farman Crashes

The Farman F.1001 monoplane designed for stratosphere flying crashed last Monday. It is supposed that M. Cagno, the pilot, who was killed, fainted at a great height.

The Brancker Memorial Lecture

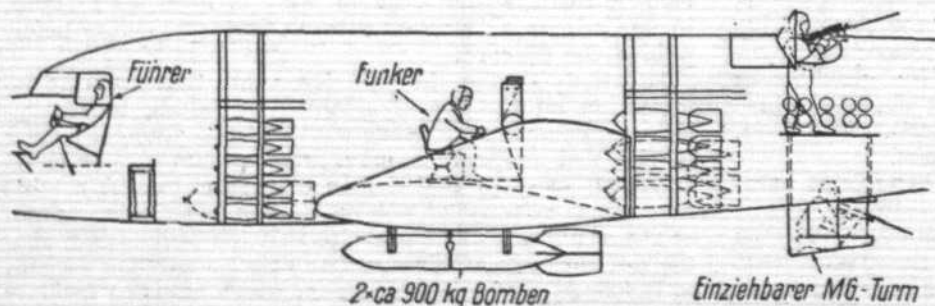
Lt. Col. F. C. Sheldermine is to deliver the first Brancker Memorial Lecture on Wednesday, October 30, at 6 p.m., at the Institute of Electrical Engineers, Victoria Embankment, London, W.C.2. The title will be "Air Transport in Great Britain—Some Problems and Needs."

Landing Fees

Farmers of Big Flats, Florida, got together to establish special prices to be paid by glider pilots landing among their crops. The tariff is: tobacco, ten dollars; vegetables or grains, five dollars, and hay two dollars. The farmers admit that it is not the glider which does the harm, but inquisitive crowds.

Lighter-than-Soviet-Air

At Moscow two new semi-rigid airships are being tested. They have been constructed under the supervision of General Nobile, of *Italia* fame. One, the V6, has a capacity of 650,000 cubic feet, but the other, the V7, is little more than half the size. It is of interest, however, because passengers and fuel are accommodated within the keel, while the small gondola is used by the pilots.



THE HIDE-OUT: A friend of ours, of a retiring nature, having discovered in the German journal *Luftwehr* this crew-station diagram for a Fokker-Douglas D.C.2 bomber, has definitely decided on the position he would like to occupy in the event of finding himself in a heavy bomber squadron in the next war.

THE ROYAL AIR FORCE

SERVICE NOTES AND NEWS



AIR MINISTRY ANNOUNCEMENTS

No. 203 (F.B.) SQUADRON

No. 203 (Flying Boat) Squadron, under the command of Group Capt. R. E. Saul, D.F.C., is now flying its four "Rangoons" from Basra to Pembroke Dock. It left Basra on July 24, arrived at Athens on the 27th, and on the 29th set out for Brindisi. On arrival at Pembroke Dock it will be re-equipped with "Singapore III" boats as soon as these can be provided, and will then fly them out to Basra.

TEMPORARY MOVE OF No. 19 (FIGHTER) SQUADRON

No. 19 (Fighter) Squadron and the Meteorological Flight returned from Henlow to Duxford on July 20, 1935.

FLEET AIR ARM

A new Flight, No. 445, has been started for the aircraft of the Fleet Air Arm which will be allocated to the 3rd Cruiser Squadron in the Mediterranean. Hitherto this squadron has not had any aircraft. The first vessel to be so equipped is the new cruiser *Arethusa*, which arrived at Gibraltar on July 15.

TROOP-CARRIERS AT ALDERSHOT

Flights in troop-carrying aeroplanes have been resumed as a normal part of Army training, and lately parties of officers and other ranks of various regiments in the Aldershot Command have had experience of "emplaning," "deplaning," and flying. With full equipment and rifles, parties of twenty-two have been taken up in a Vickers troop-carrier.

CENTRAL FLYING SCHOOL CATEGORIES

The undermentioned officers and airmen pilots have been categorised as under:—

A. to A1.

Sqn. Ldrs. J. Noakes, A.F.C., M.M., and W. A. B. Savile, Flt. Lts. J. B. M. Wallis and G. D. Harvey, D.F.C., F/O.s E. C. Bates, R. L. Wallace, and G. R. A. Elsmie, Sgts. Humphrey, L. F. Dixon, L., Jarred, R. W., and Lake, W.S.

B. to A2.

Flt. Lts. P. V. Williams, A. P. Bett, and W. R. Sadler. The flying instructor category of the undermentioned airman pilot has been withdrawn: Sgt. Chudley, F. J.

MEDICAL OFFICERS AS PILOTS

An amendment to the King's Regulations and Air Council Instructions provides that a medical officer who has qualified as a pilot may, when facilities exist at the unit to which he is posted and provided he is medically fit, keep himself in flying practice. Unless, however, he has flown solo during the preceding three months and has had solo flying experience in the type of aircraft which it is proposed to fly, the C.O. will ensure that he receives adequate dual instruction in that type before he flies solo.

RESTRICTED USE OF AERODROMES

The following aerodromes are only to be used in emergency during the periods stated:—Abbotsinch 2.8.35 to 6.9.35, Castle Bromwich 24.8.35 to 6.9.35, Thornaby 30.8.35 to 26.9.35, Turnhouse 10.8.35 to 6.9.35, Usworth 8.8.35 to 4.9.35.

During the period August 1 to October 31, 1935, visits of aircraft to the Royal Air Force Station, Wittering, are restricted to aircraft conveying personnel who are proceeding there on duty and to other aircraft requiring to use the aerodrome in an emergency.

The Aeroplane and Armament Experimental Establishment, Martlesham Heath, will close down for annual leave during the period August 5 to 18, 1935, inclusive. Aircraft are not to land at Martlesham Heath during this period except in emergency.

THE "STRANRAER"

The official name of the Supermarine general purpose flying boat fitted with two "Pegasus" X engines is "Stranraer."

THE "WALRUS"

The official name of the Supermarine spotter reconnaissance amphibian fitted with "Pegasus" engine is "Walrus."

THE "GAUNTLET"

The "Gauntlet" aeroplane, as first delivered to service squadrons and bearing Nos. K.4081 and K.4104, will now be known as "Gauntlet I."

Consequent on alterations which have been introduced, "Gauntlet" aeroplanes bearing Nos. K.5264 and onwards will be known as "Gauntlet II."

The major differences on the "Gauntlet II" are:—(i) Hawker type spars and consequently new interplane struts and bracing, (ii) Hawker type rear fuselage of square section tube, warren girder braced in the side bays, (iii) Simmonds-Corsey engine controls are fitted.

HUCKNALL AERODROME

Hucknall aerodrome, at present the station of No. 504 (County of Nottingham) (Bomber) Squadron, is to be developed to take two more bomber squadrons under the expansion scheme.

FOREIGN OFFICER WITH THE R.A.F.

Capt. Bajan, of the Polish Air Force, was attached to No. 3 Flying Training School from July 23 to 27.

R.A.F. BENEVOLENT FUND

The usual meeting of the Grants Committee of the above Fund was held at Iddesleigh House on Tuesday, July 23. Mr. W. S. Field was in the chair, and the other members of the Committee present were Mrs. L. M. K. Pratt Barlow, O.B.E., Air Comdre. B. C. H. Drew, C.M.G., C.B.E., and Sqn. Ldr. C. E. H. James, M.C. The Committee made grants to the amount of £424 5s. The next meeting was fixed for August 7.

AIRMEN PILOTS AND THEIR BASIC TRADES

The trade classification of airmen who are required to keep in flying practice is in future to include the word "pilot," e.g., carpenter (pilot), armourer (pilot), &c., and the appropriate remustering action is to be taken both as regards ex-airman pilots now in flying practice and airman pilots who complete their periods of flying service after the date of this order. When for any reason airmen cease to be liable to keep in flying practice they are to be formally remustered to their basic trades, the word "pilot" being omitted.

HOME AIRCRAFT DEPOT, HENLOW

The Home Aircraft Depot, Henlow, will be reorganised with effect from August 19, 1935, as follows:—Station Headquarters, No. 1 (G.E.S.) Wing, No. 2 (Training) Wing, No. 3 (Training) Wing, Officers' Engineering Course, Parachute Storage Section, and Storage Section. The depot will continue to be administered by the A.O.C., Inland Area, except for the purposes detailed below.

No. 1 (G.E.S.) Wing will come directly under the Air Ministry (D.D.R.M.) for technical administration. No. 2 and No. 3 (Training) Wings and the Officers' Engineering Course will come directly under Air Ministry (D. of T.) for training. The Parachute Stores Section will come directly under the Air Ministry (D. of E.) for questions concerning test and issue of parachutes and their spares. The Storage Section will come directly under the Air Ministry (D. of E.) for questions of allotment of stored airframes and aero engines and for the maintenance and modification of aircraft in storage.

ROYAL AIR FORCE GAZETTE

London Gazette, July 30

General Duties Branch

The following Acting Pilot Officers on probation are confirmed in rank and graded as Pilot Officers on the dates stated:—G. L. Cruickshanks (April 12); E. R. Berrill (April 16).

The following Flying Officers are promoted to the rank of Flight Lieutenant:—A. Earle (June 14); J. K. Brew (July 4); D. J. Alvey (July 14); H. F. Chester (July 14).

P/O. A. O. D. Cox is promoted to the rank of Flying Officer (June 16); Wing Cdr. V. Gaskell-Blackburn, D.S.C., A.F.C., is restored to full pay from half-pay (July 15) (substituted for the notification in the Gazette of July 23); Lt. G. B. S. Slater, R.N., Flight Lieutenant R.A.F., ceases to be attached to the R.A.F. on return to Naval duty (July 16); Lt. J. A. D. Wroughton, R.N., Flight Lieutenant R.A.F., ceases to be attached to the R.A.F. on return to Naval duty (July 19); Flt. Lt. N. V. Wrigley is placed on the retired list (July 27); Flt. Lt. R. H. Barlow is placed on the retired list at his own request (July 31); the short service commission of Acting Pilot Officer on probation N. R. L. Urquhart is terminated on cessation of duty (July 22).

Medical Branch

Wing Cdr. J. M. A. Costello, M.C., M.D., B.Ch., is placed on the retired list (July 28).

Memorandum

The permission granted to A. E. P. Burton to retain the hono-

rary rank of Sec. Lieutenant, which was withdrawn on his enlistment in the Highland Light Infantry, is restored on his discharge (Dec. 25, 1920).

ROYAL AIR FORCE RESERVE

Reserve of Air Force Officers

General Duties Branch

The following Pilot Officers are promoted to the rank of Flying Officer:—H. J. Raymond (Oct. 6, 1934); J. Peel (March 12).

The following Flying Officers are transferred from class A to class C on the dates stated:—E. A. H. Tanner (Feb. 9); A. N. I. Worger-Slade (July 13); J. R. Stebbing (July 18); I. C. MacLaine (July 19).

F/O. C. D. Pitman is transferred from class AA(ii) to class C (June 16).

AUXILIARY AIR FORCE

General Duties Branch

No. 600 (CITY OF LONDON) (FIGHTER) SQUADRON.—D. L. Clackson is granted a commission as Pilot Officer (July 10).

No. 604 (COUNTY OF MIDDLESEX) (FIGHTER) SQUADRON.—G. O. Budd is granted a commission as Pilot Officer (June 15); F/O. H. C. Hebard is promoted to the rank of Flight Lieutenant (June 28).

No. 608 (NORTH RIDING) (BOMBER) SQUADRON.—H. J. Williams is granted a commission as Pilot Officer (June 19); P/O. P. D. O. Vaux is promoted to the rank of Flying Officer (July 1).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commander.—V. Gaskell-Blackburn, D.S.C., A.F.C., to Reception Depot, West Drayton, 26.7.35; to command vice Group Capt. W. V. Strugnell, M.C.

Squadron Leaders.—H. W. Heslop, O.B.E., to H.M.S. *Glorious*, 22.7.35; for Engineer duties. N. L. Desoer, to No. 2 (Army Co-operation) Squadron, Manston, 20.7.35; to command vice Sqn. Ldr. J. H. Green.

Flight Lieutenants.—D. Macfadyen, to No. 111 (F) Squadron, Northolt, 22.7.35. L. L. King, D.F.C., to Marine Aircraft Experimental Establishment, Felixstowe, 23.7.35.

Flying Officers.—R. E. Barnett, to R.A.F. Depot, Middle East, Aboukir, 13.7.35. L. V. Andrews, to Royal Air Force College, Cranwell, 29.7.35. A. W. M. Finny, A. J. Hicks, S. E. R. Shepard,

F. D. Terdrey and J. B. T. Whitehead, to No. 6 Flying Training School, Netheravon, 29.7.35. S. Keane, J. N. McAuley, J. Ramsden, and A. P. S. Wills, to No. 3 Flying Training School, Grant-ham, 29.7.35. E. C. Kidd, A.F.M., to No. 1 Flying Training School, Leuchars, 29.7.35. C. W. M. Ling, to No. 2 Flying Training School, Digby, 9.7.35. J. C. Sisson, to R.A.F. Station, Calshot, 29.7.35.

Pilot Officers.—H. J. Hobbs, to No. 205 (F.B.) Squadron, Singapore, 23.7.35. T. B. Morton, to No. 7 (B) Squadron, Worthy Down, 24.7.35.

Stores Branch

Pilot Officer.—H. Stones, to R.A.F. Station, Hendon, 22.7.35.

Medical Branch

Squadron Leader.—H. McW. Daniel, to No. 101 (B) Squadron, Bicester, 25.7.35; for duty as Medical Officer.

SWISS K.L.M. ACCIDENT ENQUIRY

THE Federal Air Office at Berne has issued the following report of the findings of a committee which sat to enquire into the causes of the K.L.M. Douglas D.C.2 accident in the Swiss Alps on July 20:—

"The technical enquiry was opened by Mr. Gsell, of the Federal Air Office, together with Mr. Amstutz, control engineer. The Dutch authorities were represented by Dr. Wolff and Dr. Van der Maas, of the Netherlands Aeronautical Research Institute, as well as by Mr. Van der Heidjen, of the Aeronautical Department of the Ministry of Communications. The commission further included Mr. Moes, Inspector-General of the K.L.M. Company, and Mr. Schaerli, of the Swissair Company.

"The first findings were of a nature to allow of the conditions leading to the accident being established. Examination of the debris of the machine, possible after clearing the wreckage, and the enquiry into the wireless and meteorological services, are still being proceeded with. Pending the result of these enquiries the following has been established:

"According to the findings and the meteorological conditions it appears that during a thunderstorm, the violence of which caused damage in the region concerned (bridges and structures carried away) the pilot wanted to remain in sight of the ground while flying northward toward the pass. He must have been taken in thick fog which formed in the bottom of the valley south of the San Bernardino and obliged to circle round in a very restricted area before finding a way out into the wider valley of Pian San Giacomo. Having circled round the pilot apparently decided to make a forced landing with retracted undercarriage on a slightly sloping meadow. This forced landing might have been effected without harm to anyone, but was made difficult by the unaccustomed aspect of the narrow valley, the low-lying clouds and the violent rain. There is also the possibility of the cables of a telephonic timber haulage installation having played a rôle, in that the aeroplane while turning at height of 150 feet

(50 m.) lost speed and fell forward into some fir trees and was smashed on the ground.

"It has not been possible to find out why the pilot did not follow the approved method of crossing the Alps at a high altitude. According to weather reports given to him it should have been possible to cross the Alps at great height without being inconvenienced by storm or fog.

"No technical deficiency of the Douglas machine or its engines have been found."

The Ruyssede Case

THE test action arising from the accident to the Imperial Airways machine *Apollo* at Ruyssede, Belgium, on December 30, 1933, has been adjourned until October 10. Mrs. E. C. Grein, widow of one of the passengers, alleges negligence.

Before the adjournment last Wednesday, Major R. H. Mayo, technical adviser to Imperial Airways, said in cross-examination that he thought that, under the existing weather conditions, it was prudent for the pilot to take off at Haren and that he was fully justified in doing so.

Mr. O'Connor (for Mrs. Grein): Do you think the pilot was fully justified, with nothing to check his course but a wireless bearing, in going on?—Yes.

But he did not get his bearing?—His request had been picked up and acknowledged.

Mr. Justice Lewis (to Major Mayo): Assume that the pilot knew he was in the vicinity of the radio mast, and assume from the fact that, having sent out a call for a bearing, he did not know whether he was on the proper course, do you still say he was justified in flying below 900 feet?

Major Mayo: If he knew he was likely to get into ice-forming clouds by going higher he was justified in flying below 900 feet.

HUNGARIAN HOLIDAY

Being a Colourful Account, by a Hungarian, of the Experiences of the British Pilots and Their Passengers Who Took Part in the Recent "Magyar Pilota Pic Nic"

[The picturesque report which follows is the work of an eighteen-year-old Hungarian enthusiast, E. Nagy, jun. His descriptive style is so gaily entertaining that we have refrained from robbing it of its character by transcription into conventional English.—ED.]

AFTER the full success of the last year's event (writes our Hungarian enthusiast) the Magyar Touring Club arranged, in conjunction with the Royal Aero Club and the Automobile Association, the second Magyar Pilota Pic Nic.

The guests were expected on July 13th about 12 o'clock at Budapest's airport, Mátyásföld.

At 11.20 a.m. arrived Mr. L. Lipton, who had visited Mátyásföld in early morning, but finding that nobody had arrived he flew back to Siófok and bathed again in the Balaton. After him landed Mr. Dundas, who came also from Siófok.

Just about 11.30 a.m. appeared a flight of three machines flying in formation, consisting of a B.A. "Eagle" and two "Puss Moths." As the planes came over the horizon, Mr. Stephen Horthy, jr., son of the Governor of Hungary, took off in a training plane and led the planes to the airport.

The pilots, Flt. Lt. G. Shaw, Mr. E. Bret and Mr. O. J. Tapper (the English leader of the Pic Nic) were received by Gen. George vitéz Rákosi, director of the Aviation Bureau; Andreas Liber, vice-lord mayor of Budapest; Lt.-Col. Eugen Kara, vice-president of the Hungarian Aero-Federation; Dr. Julius Vermes, president of the Touring Club; Mr. Ad. Bresztovszky, professor of the Polytechnic in Budapest; Duke Francis Hohenlohe; Count Alex. Andrássy, and Major Stephen v. Grossschmidt, commandant of Mátyásföld Aerodrome.

Mrs. G. Shaw was the first-arrived lady; many flowers awaited her.

The next plane came in at 12.50 p.m.; this was Mr. H. Deterding's "Fox Moth"; the passengers were Mrs. Deterding and Miss Cobbold.

The seventh was Mr. G. Linnell, who flew alone in his "Moth Major." After him Mr. A. G. Selfridge and Mr. E. Acheson landed. Mr. Selfridge tells for the broadcasting transmission how the journey was, how glad he is to see again Hungary. Mr. Selfridge was, of course, in his sentential straw hat, which he wears when flying as anybody else would an amulet.

Then alighted a blue Miles "Hawk." It was Maj. R. N.

(Continued on page d.)



At the Magyar Pilota Pic Nic: (Top left) Major Thornton, Mrs. Thornton and an impressive limb of the Hungarian law. (Top right) Mr. A. E. Gardner, Prof. Silan (the official interpreter) and Mr. H. R. Presland. (Bottom left) Mrs. Deterding, Miss Cobbold, Mr. Deterding, Mr. Stephen Horthy, Jnr., and Mr. E. Kirchknopf. (Bottom right) Flt. Lt. Shaw with Mrs. Shaw and two of the Hungarian hosts.

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FLIGHT.
August 8, 1935.
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NEWS in V

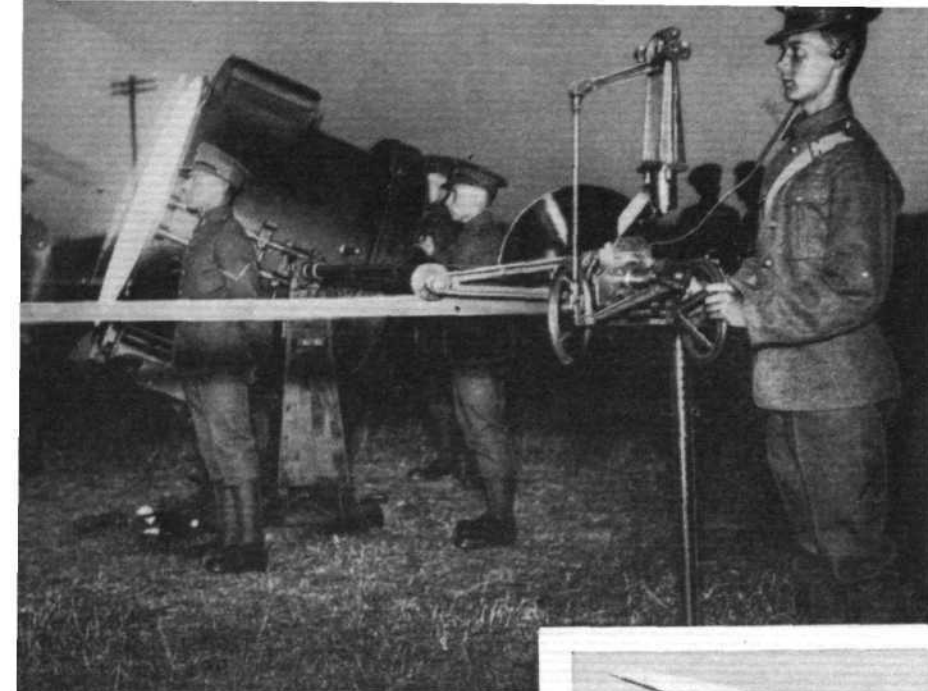
Aeroplanes and Personalities

Figured in Aviation News

the Last Week or Two

(Left) Remote control—comparatively—for a Territorial search-light during the Air Exercises.

(Right) Pilot squadron who Exercises; Hawker "N"



(Above) The very last of the open D.H. "Moths"—destined for the Austrian Aero Club. (*Flight* photograph.)

(Left) Air Marshal Sir Robert Brooke-Popham, A.O.C.-in-C., A.D.G.B., discusses the Air Exercises with Air Comdre. A. D. Cunningham.

(Right) A Douglas D.C.2 recently delivered to K.N.I.L.M. being assembled at the Dutch naval aerodrome at Surabaya

(Left) Mr. and Mrs. S. J. L. Hardie, just back from a six months' flying world tour. Mr. Hardie is vice-chairman of the British Oxygen Co.

(Right) What happened when Mr. Duncanson had to land the Hendy "Heck" at Hanworth with its wheels retracted.

(Left) Mr. and Mrs. Alfred Ellison chat with Capt. Birkett (on left) at Heston before leaving for the Hungarian rally in their "Leopard Moth."

(Below) The crew of the Short "Singapore" on the (Left to right) L.A.C. Evans, Flt. Sgt. Jackson, Sgt. P/O. H. J. Hobbs and Sgt. Jett



are on one

FLIGHT.
August 8, 1935.
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NEWS

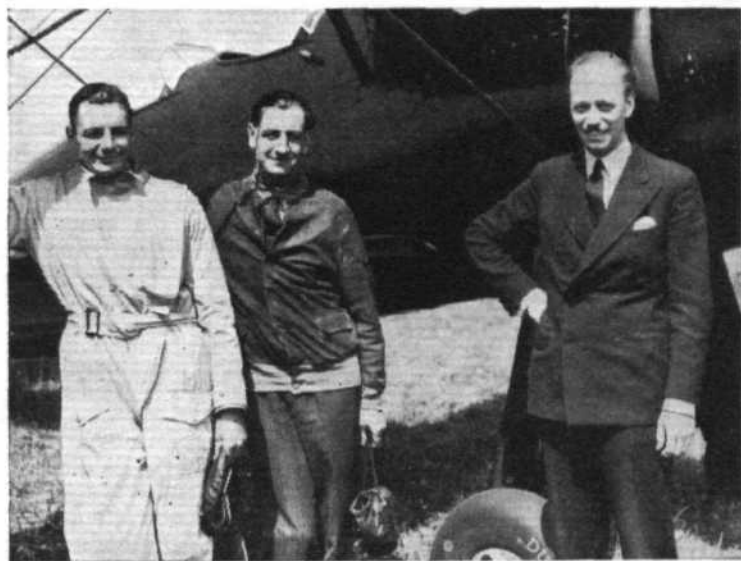
at Have
during

a Fleet Air Arm
took part in the Air
machines are
"Ospreys."



(Right) Three well-known Avro personalities with the new "636": Flt. Lt. F. B. Tomkins, Mr. "Bill" Thorn and Mr. C. J. Wood. (*Flight* photograph.)

(Below) Filling up the new K.N.I.L.M. Douglas with Shell 87-octane fuel.



(Below) Fairey "Gordons" flying over a remarkably solid-looking "cotton-wool carpet" while on a raid during the Air Exercises.



Singapore survey flight:
Mr. W. N. Plenderleith,



Hungarian Holiday (cont. from page a.)

Thornton's. His wife got many-many flowers and both were attacked by the photographers continuously. Mr. H. R. Presland, accompanying him Mr. A. E. Gardner, in a "Gipsy Moth," were the last arrivals.

The evening programme was dinner and gipsy music in one of the greatest restaurants in Budapest.

Sunday morning at 10 o'clock we started. The machines took off for Mezökövesd. Accompanying flew several Hungarian 'planes. The landing place was a large meadow. The pilots were received by the Matyos, in their picturesque peasant dress, who sang and danced the Csardas to the gipsy music. Mr. Selfridge tried and danced with the nice Matyo girls. He said it was very good indeed, but, I think, we can't hope that in several years the whole world dances Csardas instead of Fox-trot and family.

After lunching at 3.30 p.m. we took off to Hortobágy. But there happened a little accident. The 'planes are standing in two rows. Everybody is ready to take-off as a "Moth" from the second row begins to taxi-in and makes, without taking off, a little forced landing in Flt. Lt. Shaw's "Eagle." As Flt. Lt. Shaw and his wife find it impossible to remain further in the machine they fall both to earth, but everybody is unhurt. Not so the 'planes.

So we leave the damaged 'planes in Mezökövesd. Flt. Lt. Shaw and his wife fly in Mr. Deterding's "Fox Moth" with the others to Hortobágy, while Mr. Tapper flies to meet the Mollisons (who had stopped at Frankfurt on the way) at Mátyásföld. After landing we are greeted in the name of Debrecen town. The Hortobágy is a vast plain, very similar to the Steppes; cattle and horses pasture and run across the area which belong to Debrecen town. Everybody gets, from the hat-spinners of Hajdunánas, a straw hat decorated with a special Hungarian flower named *drvalanyhaj* ("orphan girl's hair"), which is well known by those who have seen Hungarian boy scouts. After five minutes' flying we landed in Debrecen. Dinner was given for us there in the Strand Bath, and the Mollisons had arrived.

Monday forenoon we visited Debrecen. The Deri Museum is full with mummies; they look very well. After having a tea in the Museum we went back to the aerodrome and landed, after short flight, in Mezöhegyes, the horse-breeding plant of the State. We were received by Lord-Mayor Fáy. Mr. Selfridge alighted in Kigyos, in the park of Count Wenckheim, because he wanted bath. A great harvest feast was held, and then we inspected the whole farm.

At 5 o'clock we arrived at Szeged. A crowd waited for us. Amy Mollison landed as the first, but after touching soil the machine turned around its axle. This figure of land-aerobatics is called here universally with a good Germano-Hun-



Mr. O. J. Tapper, of the A.A., leader of the British contingent, with Prof. Silan. On the left is Mr. E. Kirchknopf, secretary of the Magyar Touring Club, who was mainly responsible for the organisation.

garian word *radli*. Poor Lord-Mayor Fáy, who was travelling in this 'plane, was very afraid.

At 8 o'clock was an organ-concerto in the Votive Church, whose organ is the greatest in size in Hungary. At 9 o'clock we had dinner.

Tuesday forenoon we flew to Siófok to the Balaton. The Balaton is Hungary's greatest lake, 48 miles in length. Opportunity for all water sports: bathing, swimming, rowing, motor-boating was provided.

Thursday afternoon back in Budapest. We drove to the Zanoshegy (1,734 ft. high), from where is a wonderful view to the town down on the banks of the river. The evening was the last we spent together in Hungary. We had a farewell dinner in the Kakuk, an old Restaurant in Buda with gipsy music. After various toasts and thanks everyone got a very nice souvenir: a memorial plaque. Friday forenoon a last farewell—Tokajer wine is very fine—we drive to the airport, the 'planes take off . . . To see each other again at the next Pic Nic!

A Happy Combination

THE Hendy "Hobo" owned by Lord Patrick Crichton Stuart, has lately won four races out of five. It may be remembered that in last year's King's Cup race the machine was so unfortunate as to run out of petrol when it had an excellent chance of winning. The four successes it has had are the Broxbourne Visitors' Handicap, London-Cardiff Air Race, Hanworth Trophy and Midland Challenge Trophy events.

So the Pobjoy "Cataract" engine in this fascinating little machine has spent a very large portion of its life at full throttle. The airframe is the only one of its kind in existence. It was constructed by Mr. B. Henderson some four years ago and was originally intended to take the 40 h.p. A.B.C. "Scorpion."

The Backward I.F.S.

IN the course of an article on "A Look Into the Future" in a recent issue of the *Irish Motor News*, the writer remarks that in the matter of aviation the Irish Free State is the most backward country in Europe: "There are more aeroplanes in Abyssinia or Manchuria than there are in all our twenty-six counties. Dublin is the only European capital which has no regular air services. Private aeroplanes are very few, and despite the enthusiasm of a small minority, there is little indication that the country is likely to become air-minded. As things are going now, it will probably be thirty years before our Irish public and our Irish politicians become air-minded."



A RECORD HOLDER. The Italian Cant. 501 flying boat which, as already recorded in *Flight*, flew from Montfalconeto Berbera, a distance of 3,104 miles in 24 hr. 55 min. thus setting up a new world's non-stop record for seaplanes. The engine is a 750 h.p. Isotta Fraschini.



Topics of the Day

Interesting the Pupil . . .

ONE of the greatest difficulties confronting the instructor of a club with a continually shuffling membership concerns the business of keeping his pupils interested. Probably thirty or forty per cent. of "A" licence pilots discontinue their flying just as soon as their tickets are in their hands. Of these, twenty per cent., or even less, rush over once or twice a year to put in the necessary three hours after a little refresher dual, treating the place for the bulk of the year as a convenient social or country club.

Five or six years ago one of the oldest clubs in the country was steadily losing its flying members simply because a minimum of fifty hours of solo flying was demanded before any member was either allowed to go across country by himself or to take a passenger. Since that time the qualifications have been eased in the matter of experience but sensibly tightened up as far as actual flying skill is concerned.

In other words, each pupil is treated according to his merits, though certain minimum solo figures are still, I believe, demanded—probably because of some clause in the insurance policy.

. . . and Keeping Him Interested

AT another and comparatively newly re-formed club the pupil is taken, even before he has gone solo, for a simple cross-country flight. During this flight, which is made on any day when the weather conditions preclude useful landing practice, the pupil is in sole charge as far as the navigation is concerned, and, even if he fails to reach his objective, he has at least learnt a very useful lesson. In addition, he has been shown that the business of encircling an aerodrome is not the be-all and end-all of flying training, and has been given some pleasant respite from the interminable landing circuits.

Thereafter, the novice has a definite object in view and practises approaches and forced landings until such a time as the instructor feels that he is safe to tackle a real emergency landing.

At the conclusion of, perhaps, fifteen hours—or even less in some cases—he is sent off to another aerodrome by himself and encouraged to stop there for lunch. The mere fact of landing at a strange aerodrome by himself gives him confidence and he feels, in addition, that he is really flying usefully.

The Forced Landing Bogy

NOWADAYS there is very little excuse for holding an intelligent novice by the hand. The chances are hundreds to one against an engine failure and the most assiduous forced landing practice will not always prevent a mild "crack-up" if the dreadful moment arrives. There are pilots with thousands of hours to their credit who have never suffered a forced landing of any kind.

Although no one should be allowed to push off across country without having first proved his spot landing ability, the whole forced landing business is largely an echo of the bad old days when engines stopped as readily as they started unready.

The most amusing part of the whole thing is that the novice, in his early solo hours, faces a greater chance of engine failure than at any other time. During practice circuits his engine is alternately at full throttle, two-thirds throttle, and "no throttle," while on a cross-country it is turning round at a constant and easy speed. On a cross-country, too, the pilot is usually flying at a height of 1,500 or 2,000ft., and has a fair amount of time in which to look for a good field.

Bad Weather

THE most serious possibilities are probably of forced landings caused either by carelessness concerning the quantity of fuel put in the tank at a visited aerodrome or by the appearance of really bad weather.

Little can be done to prevent the first eventuality, though a cross-country pilot has little enough to amuse him and will almost certainly notice that his supply is running short unless the gauge is playing tricks. If he manages to get lost he has, once again, plenty of time to discover a good field and to fly over it low down once or twice before actually "rumbling" an approach.

I have always felt that the amateur knows all too little about weather signs and portents. He has, in fact, very little chance of finding out about it. Fortunately, it is rarely that things close in so quickly that a forced landing must be made quickly, and a pilot who flies, for instance, over the Pennines in low cloud conditions is usually asking for trouble. While motoring between Sheffield and Manchester I was once confronted by the front view of a cabin machine flying right down on the road. The pilot was following a nearby railway line, and I am still wondering what he did when he reached the tunnel! The tops were swathed in cloud.

Meteorological

IF any pilot really wants to learn something about the whys and the wherefores of weather, he can purchase, from the Stationery Office and for a sum of 2s. 6d., a book entitled *A Short Course in Elementary Meteorology*, by W. H. Pick. A great deal of it may be beyond him, but he will learn something about causes and effects.

However clever you may be under the hood, don't imagine that a turn indicator will take you through. Even an experienced pilot with a twin-engined machine will not push through or go above low cloud unless he *knows* that the aerodrome at the other end is clear, and that this aerodrome is surrounded by plenty of flat country.

The mere fact that one's weather report is fairly good is hardly a sane reason for carrying on when the sky is right down on the hill-tops.

INDICATOR.

Private Flying**FROM THE CLUBS***Events and Activity at the Clubs and Schools***MARSHALLS**

Last week's flying time was 57½ hr. Messrs. Gatty, R. A. Jones and Barnett have taken their "A" licences. Mr. Baines and Mrs. Montgomery have become members.

LEEMING

H.R.H. the Duke of Gloucester visited the aerodrome last week. Other visitors were Mr. J. Cunliffe Lister, Col. Ropner, M.P., Dr. Fraser, and Miss Longstaffe.

Mr. Low and Mr. Cane have taken their "A" licences, and Dr. Stubbs and Mr. R. C. Pick have renewed their licences.

During July 159 hr. 40 min. were flown.

HANWORTH

The Club's blind-flying machine should be ready by the end of the week.

Mr. Charles Coborn, the famous actor, made a flight to celebrate his eighty-third birthday last Sunday. Mr. S. T. Lowe has taken delivery of a Comper "Swift."

New members are: Messrs. F. Turvil, A. L. Roberts, L. Von Fangel, and S. T. Lowe. Flying time last week was 57 hr. 30 min.

READING

Dr. Nash has returned for a refresher course. Other visitors are Mr. and Mrs. Aikey from South Africa.

Mr. George Western, of "old school tie" fame, had a flight in a "Falcon" and as a result is going to take his "A" licence.

Airwork, Ltd., have taken delivery of their new demonstration De Luxe "Hawk."

NORTHAMPTONSHIRE

Mr. A. H. Cook has been experimenting with the machine which he will fly in the King's Cup Race, and which is housed at Sywell. Mr. J. W. Tomkin's Gloster "Gamecock" has been passed by the A.I.D. and will shortly make its maiden flight. Mr. Tomkins accounts for his high speed landings on the Club "Moth" as being practice for his new machine.

Flying times last week totalled 40 hr.

MASONIC COUNTRY AND FLYING CLUB

At a special general meeting of the Club held at Weybridge on Saturday, July 27, the following proposals were passed unanimously: 1. That the name of the Club be changed to The "Julian Hill" Country and Flying Club. 2. That ladies and friends of members who were not Freemasons should be eligible for membership, provided that they were proposed and seconded by two existing members who were subscribing Freemasons, and subject to the approval of the Committee.

NEWCASTLE-UPON-TYNE

During the first week at the new Municipal Airport, the Newcastle-upon-Tyne Aero Club put in a creditable amount of flying despite the fact that the "Puss Moth" was not in service during the latter part of the week. Flying time totalled 57 hr. 30 min.

Mr. A. E. George, who obtained his Royal Aero Club certificate (No. 19) on September 6, 1910, has completed his "A" licence tests. Two members who own Autogiros paid a visit to the Club last week.

REDHILL

Mr. G. McArthur made his "B" licence night flight last week, and Mr. P. G. Jackson successfully passed his "B" licence tests at Hendon. Two more blind flying certificates have been obtained by members.

Last Saturday the inaugural parade of the Borough of Reigate Special Police, Flying Section, was held at the aerodrome. Twelve members were sworn in as "Flying Specials" and a display of formation flying was given by three "B" licence pupils. Mr. G. C. K. Browne has presented the Club with a collection of aeronautical publications.

Total flying time last week was 101 hr. 50 min. Five new members joined the Club.

CINQUE PORTS

Lympe will be "attacked" by a Dawn Patrol from Brooklands next Sunday. It is expected that a large number of members will take the air to hinder the Brooklandians in their search for a free breakfast.

First solos were made last week by Miss E. M. Thrupp and M. Provost. M. Fred Engel has passed his "A" licence tests. There are four new flying members and two new ground members.

No. 601 (F) Squadron has concluded its annual camp training and returned to Hendon last Sunday. London Film Productions have been in the locality shooting scenes for "The Conquest of the Air."

Sir Phillip Sassoon arrived in his "Leopard Moth" last week, and Mr. Anthony Eden came in a similar machine in time for Sunday lunch. Another visitor was Mr. Constant, flying Mr. Irvin's Stinson.

Flying time last week was 67 hr.

BRISTOL

Mr. J. D. Hannington made his first solo flight last week, and Mr. T. S. Jones transferred from "ordinary" to "pilot" membership category.

The total flying time for July was 195 hr. 15 min.

CASTLE BROMWICH

New members include Messrs. A. B. I. Dick, H. C. Batholomew, E. Martin Scott, E. Sturman, C. F. French and J. Kirby. Messrs. N. Ryder, and A. H. Swann passed their "A" licence tests.

Flying times were 13 hr. 20 min. dual and 24 hr. solo.

LEICESTERSHIRE

During July 138 hr. 15 min. was flown. Messrs. A. A. Gordon-Cranmer, E. W. Kennard, and R. E. Frears made their first solos. Mr. E. W. Kennard took his "A" licence.

A Dawn Patrol was flown at Leicester on Sunday, July 7. Sixteen machines participated. Leicester Municipal Airport was officially opened on Saturday, July 13.

HAMPSHIRE

The Club's five aircraft flew 310 hr. during July.

Lady Joan Hoare, Miss D. M. Biddlecombe, Mr. A. H. Lee, and Mr. H. Swanston have become members, and Mr. G. S. Meek has made his first solo. The following have qualified for "A" licences: Miss J. P. Richardson, Mrs. N. E. Higginbotham, Lt. P. H. Higginbotham, R.N., Mr. F. W. Chapman and Mr. J. Winning. Lady Joan Hoare, Mrs. G. E. Alington Messrs. R. C. W. Ellison, N. R. L. Urquhart, P. S. Papps, T. H. O. Richardson, and R. E. F. Potter have taken their blind flying course.

HERTS AND ESSEX

At Broxbourne, flying time, last week, was 108 hr. 41 min., of which 43 hr. 41 min. represented dual.

Mr. H. M. Cole has obtained his "A" licence, and Messrs. J. N. Campbell Wood, J. B. Harrison, R. C. Dunlop, and R. D. McLaren have made first solo flights. There are four new flying members—Messrs. K. S. Ghandy, R. D. McLaren, A. R. Roussel, and Morian Hansen, and one associate member, Mr. P. D. White. Mr. Richard Schonthal, who obtained his "A" licence at the Club last season, arrived from Austria last Wednesday in a Hopfner cabin monoplane.

BROOKLANDS

Membership is still soaring and last week three new members were enrolled—Messrs. Peachey, Ettwell, and Bunsha. First solos were made by Mrs. Sainsbury, and Messrs. Saunders and Selby, while Messrs. Appleton, Madders, King, and Miss MacKinnon completed their tests for their "A" licence. Mr. V. J. Wheeler has completed his blind flying course. Visitors this week included Mr. Melrose in his Autogiro, and Miss Nancy O'Neill and Mr. Henry Kendall, the film stars, who went for trial flights. Cross-country flights were made by Miss Malcolm, who flew to Belgium, and Mr. Morris, to Holland. Mr. Aga has returned from Paris. Capt. Davis entertained officials of the Air Ministry at the aerodrome on Monday.

ABERDEEN

The total flying time for the month of July was only 36 hr. 25 min. This poor total is due to the fact that but one machine was available for the greater part of the month. Now, however, two "Swallows" and a "Puss Moth" are at the disposal of members.

Mr. R. Dempster made his first solo on July 11, and one new member, Mr. McBain, has joined. The "Puss Moth" has done some useful charter work, including the carrying of General Sir Ian Hamilton to Nairn, where he inspected the Edinburgh and St. Andrew's University O.T.C. Mr. W. J. Alington has been transferred to the school as chief instructor. Two keen flying members, Messrs. Ian and Allan Scott, have purchased a "Moth," which, between flights, is kept in the Club hangars.

NEWTOWNARDS

A successful tea party and forced-landing competition was held recently by the Airwork School at Newtownards. A short aerobatic display by Flt. Lt. Bryant, the Ards flying instructor, was followed by an unusual competition. Flt. Lt. Bryant made two circuits and landings introducing twelve common errors committed by pupils. Competitors were required to write down the mistakes they observed, and the event was won by Mr. Metcalfe.

At tea-time two Hillman air liners arrived and departed, leaving the air clear for the main item. A low fence was erected of light bamboo canes topped with white cardboard squares. The structure looked like a solid fence, but was quite harmless in the event of a machine failing to clear the top. The fence was 30 yards wide, and white strips marked a limit of 200 yards to which competitors might run and still gain full marks. Landings were to be made from 2,000 feet without the use of engine or brakes, and it is

Private Flying

significant that not a single competitor made a poor attempt, though four out of seven cut things a little too fine and failed to clear the fence by a few inches.

The winner, Mr. K. W. Webb, gained 90 per cent. of the total marks. The most experienced pupil had only 12 hours' solo to his credit, and the least experienced only 3 hours.

BENGAL

The flying return for June shows 83 hr. 25 min., which is a marked improvement on the flying time of the previous month. The Club's new pilot instructor, Mr. R. P. Dhargalkar, took charge on June 1 and under his capable organisation flying is increasing daily.

The Club's new "Moth Major" has been delivered and was christened by the Hon. Sir Leonard Costello, Kt., the president

of the Club, on June 23 at a tea party given by the members in honour of the knighthood conferred upon the president by His Majesty the King.

Mr. Rabi Roy is taking dual instruction and Mr. L. K. Mahanti has made his first solo flight. Mr. A. J. Dash has passed all tests for requalification for his "A" licence.

RANGOON

The Club's "Moth" aircraft put in 58 hr. 25 min. flying during June. The decrease of 10 hr. 10 min. compared with last month's figure is due to generally bad weather conditions.

Mr. K. Ano, who crashed his machine while flying to Japan, has taken some dual to "keep his hand in." Mr. Mills and Mr. Pradhan have become pupils.

A "Moth" is now equipped for blind flying.

The Raduno del Littorio

AS already announced in *Flight*, the Raduno del Littorio international light aeroplane rally takes place in Italy from August 24 to 30. A most attractively produced handbook, giving rules and full details, has now been published in Italian, English, French and German. It is obtainable from the Royal Aero Club, 119, Piccadilly, London, W.1, or from the Italian State Tourist Department, 16, Waterloo Place, London, S.W.1.

Reading's Loss

MR. JOHN LAWN, who, with Mr. E. Boysen, was killed at Reading aerodrome last Sunday, will be sadly missed by the members of Reading Aero Club, whose flying instructor he had been since 1931. He was an excellent and careful demonstrator who knew better than most how to get the best out of a machine, and often gave aerobatic displays with "Hawk" aircraft. As an instructor he was liked from the first by all his pupils. To his wife and children we offer our deepest sympathy.

Mr. A. T. E. Eadon's New Post

MR. A. T. E. EADON, Deputy Director of Civil Aviation in India, is vacating his appointment with the Government of India at the end of this month. He is to take up duties as Principal of the Aeronautical Training Centre, which will be shortly established at New Delhi.

Lord Ronaldshay, who has taken the lead in organising the training centre, is expected to be chairman of the board of Governors, which will contain at least twenty-five prominent persons in India, including representatives of transport companies and the Indian States.

The Centre will be opened in October, with about seventy-five pupils from all over India.

Death of Mr. G. E. Collins

FLIGHT regrets to have to record the death of Mr. G. E. Collins, of Cambridge, the well-known glider pilot. Mr. Collins, who was with Sir Alan Cobham's display, was killed at Ramsey, Huntingdonshire, on July 30, when a wing of his glider, in which he had been towed to 2,000 feet and cast off, broke in the air. It was stated at the inquest that he had performed various evolutions and was carrying out a stunt—the first half of an inverted loop—when the collapse occurred.

Among Mr. Collins' achievements were the securing, last year, of two British gliding records, one for distance with a flight of 98 miles from Dunstable to Holkham Bay, Norfolk, and the other for distance with a passenger, when he flew from Dunstable to Cheimsford, a distance of 45 miles. He had made a special study of meteorology in relation to gliding.

Mr. Collins was shortly expecting to return to Dunstable as an instructor with the London Gliding Club during its summer camp. He leaves a widow, for whom his many friends in the gliding and aviation world will feel the deepest sympathy.

New Life in Spain

A COMPANY under British auspices is about to be formed in Madrid for the purpose of dealing in and building under licence British aeroplanes of suitable design and to take over the aerodrome owned by the Duke of Estremera and Mr. José Ansaldo—the latter being the Chief Pilot of the Spanish air mail lines.

The aerodrome is ideally situated, adjoining the Quatro Vientos Government Aerodrome. The field is on a slightly higher level than the last named, and slopes very gently, so that drainage is not required. The soil is firm, gritty and grass-covered, and possesses a great advantage over the other aerodromes near Madrid in that it never hardens even in the hottest summer days and is neither soppy nor soft under heaviest rain conditions.

On the aerodrome is a beautiful little clubhouse with control tower, a roomy hangar, storehouse, machine shop, and petrol tanks, with ample space behind the existing hangar for erecting new sheds and machine shops.

The company will specialise in tuition, which will be carried on in three sections, using light motor gliders, light aeroplanes of one of the popular British makes, and heavier and faster machines for training advanced pupils, who have the intention of serving their term in the army as pilots. For this particular purpose six Fairey "Foxes" are being acquired.

The Duke and Mr. Ansaldo are the pioneers of civil flying in Spain, but up to now there have been no facilities for this either as a sport or as a profession. It is true that there are many excellent pilots in Spain and, judging from the machines in which they will insist on flying to keep their hand in, they must be about the bravest on earth. It may interest pilots to know that the Duke—excellent sportsman that he is—has evolved a new sport. This is wild turkey hunting in motor glider! His many trophies testify to his skill in this fascinating game.

In order to foster this new aeronautical enterprise in Spain the Government is giving a subsidy of 4,000 pesetas (£115) for every machine built in the country, as well as many other facilities.

Misunderstandings Cleared Up

MR. B. G. DE GREEUW writes to say that the parachute descent which was filmed at Brooklands on June 17 was made by him for the G.Q. Parachute Company; the drop was not made by another parachutist, nor was any parachute used other than Mr. de Greeuw's own 26ft. seat-pack G.Q.

Plywood in the Tropics

"ANYONE having doubts as to whether plywood can stand up to work in the tropics should see the condition of my airframe." This is an extract from an eulogistic letter which Phillips and Powis Aircraft, Ltd., have received from General A. C. Lewin, who has been using his "Hawk Major" abroad for the last eight months.

Forthcoming Events

Club Secretaries and others are invited to send particulars of important fixtures for inclusion in the list.

Aug. 10-20. Second International Austrian Alpine Flight.
Aug. 17. Round the Isle of Wight Air Race and Portsmouth Air Trophy.
Aug. 24-25. Third International Flying Meeting, Lympne.
Aug. 24-Sept. 1. National Gliding Competition, Sutton Bank.
Aug. 24-25. Cinque Ports Club. International Flying Meeting and Wakefield Cup Race.

Aug. 24-30. Raduno del Littorio, Roma. Reale Aero Club d'Italia.
Sept. 6-7. King's Cup Air Race. Start and Finish: Hatfield.
Sept. 14. Cinque Ports Club. Folkestone Aero Trophy Race.
Sept. 15. Gordon Bennett Balloon Race, Warsaw.
Sept. 21. London-Cardiff Race. Cardiff Aeroplane Club.
Oct. 12-28. International Aircraft Exhibition, Milan.

HERE AND THERE

New Maps : Lawrence Films : Internal Air Transport Committee

New Flying Maps

THE Air Ministry states that the following ordnance survey aviation maps have been reprinted and now contain all the information issued in Notices to Airmen since the original date of issue up to Notice No. 50 of 1935: (a) 10-mile map of Great Britain, sheet No. 1; (b) $\frac{1}{4}$ -inch map of England and Wales, sheets Nos. 1, 2, 3, 4, 5, 6, 8, 10, 11 and 12; (c) $\frac{1}{4}$ -inch map of Scotland, sheets Nos. 2 and 10.

The A.A.'s Good Work

AT last week's annual general meeting of the Automobile Association it was stated that during the past year the Aviation Department had supplied maps to members for flights totalling, in the aggregate, more than 600,000 miles. Ten more grounds had been added to the A.A. register of temporary landing grounds.

The co-ordination of R.Ae.C. and A.A. aviation activities, which has had effect since August, 1934, was favourably commented upon.

A "Lucky Star"

FEELING, evidently, that the good offices of St. Christopher are nowadays too much the monopoly of motorists, Beatrice Davies-Cooke has produced "The Airman's Star Medallion," and supplies it from her address at Layfield, Kent, at 7s. 6d. (for fixing to machines) or 5s. 6d. (as a pendant for personal wear). The inscription which it bears is from Psalm CXXXVIII: "If I take my wings early in the morning and dwell in the uttermost parts of the sea, even there also shall Thy right hand lead me; and Thy right hand shall hold me." Some cross-Channel pilots might regard the opening lines with mixed feelings.

The Lowe-Wylde Fund

THE fourth list of donations to the Lowe-Wylde Memorial Fund is as follows:—

	£	s.	d.
R. F. Dagnall	20	0	0
Her Grace The Duchess of Bedford	5	0	0
E. W. Wallford	5	0	0
H. W. H. Moore	3	3	0
H. Duncan Davis	2	10	0
Major J. C. Savage	2	2	0
E. M. Wright	2	2	0
John Hopcraft	1	1	0
S. A. Dismore	1	1	0
Capt. Stewart Burt	1	0	0
Lady Mary Bailey	0	10	0

Donations should be sent to Mr. E. C. Gordon England at the London Air Park, Feltham, Middlesex. The total amount received is now in the region of £380.

Lawrence of Arabia

ACE Films, Ltd. have produced an excellent film entitled "Lawrence of Arabia" which is now circulating. Made very largely from material supplied by Mr. William Courtenay, with films lent by the Imperial War Museum, it forms an unusually good record of some of the activities of one of the greatest generals of our time. Much of the Palestine film was

taken by Mr. Lowell Thomas during the actual campaign and this, together with the commentary of Sir Ronald Storrs and Mr. Courtenay, make it a film well worth seeing.

There is also a report that a group in Hollywood are producing "an authentic version of the activities of Lawrence in the Near East in the World War."

Alexander Korda is, in this country, making preparations for an authorised film based on Lawrence's own book, "Revolt on the Desert."

What with these films and the recent issue of Johnathan Cape of Lawrence's "Seven Pillars of Wisdom," the history of this amazing man is likely to be kept well before the public for some time to come.

Burnelli Agents

THE Uppercu-Burnelli Co. have appointed the firm of W. S. Shackleton, Ltd., of 175, Piccadilly, London, W.1, as their representatives in Great Britain in connection with licensing and manufacturing rights of Burnelli aircraft (see photograph on page 152).

A Clear Berth

A NOTICE to Airmen states that pilots must not land at Brooklands between 13.00 and 17.30 hours on certain days on which motor racing is taking place (viz., September 21 and October 19) without first obtaining permission in writing from the Aerodrome Manager. The Notice adds that they should avoid flying over or in proximity to the track at a lower altitude than 2,000 ft. while racing is in progress.

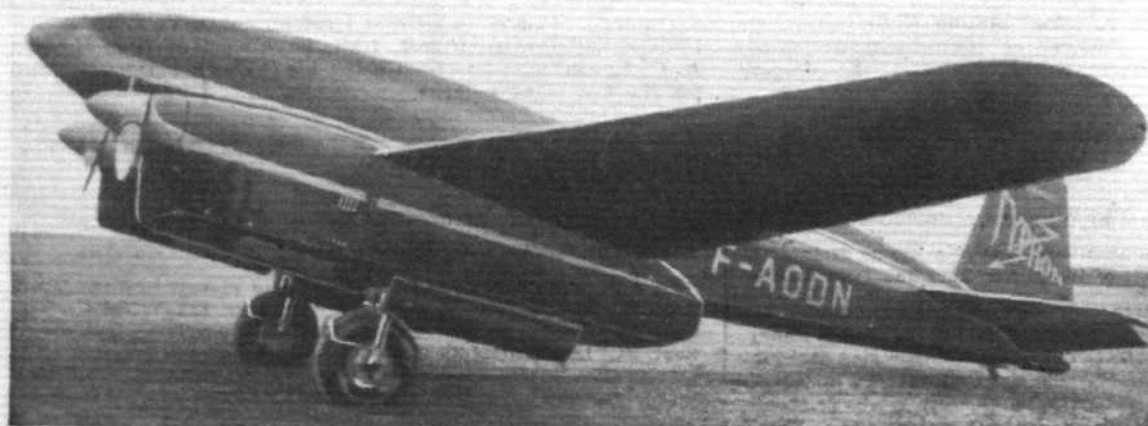
An Up-to-date School

A BOYS' school which is sufficiently up to date to advertise the name of the nearest airport on its prospectus as well as the railway station, deserves mention and encouragement. Such an establishment is Field Place, Highcliffe-on-Sea, a preparatory school for the R.N. College, Dartmouth, and for the public schools. Mr. R. P. S. Davidson, late R.N.A.S. and R.A.F., is the headmaster.

Committee on Internal Air Transport

THE Prime Minister has appointed a committee to consider and report to the Secretary of State for Air upon measures which might be adopted by His Majesty's Government or by local authorities for assisting in the promotion of civil flying in the United Kingdom, and their probable cost.

The committee will take into account the requirements of the Post Office for air mails and the relation between flying and other forms of transport. The constitution of the committee is:—Brig. Gen. Sir Henry Maybury, G.B.E., K.C.M.G., C.B., of the Ministry of Transport; Sir Arthur Robinson, K.C.B., D.S.O., M.C., of the Post Office; Mr. J. A. N. Barlow, C.B., C.B.E., of the Treasury; Sir Cyril Hurcomb, K.B.E., C.B., of the Ministry of Transport; Sir Arthur Robinson, G.C.B., C.B.E., late of the Ministry of Health; and Lt. Col. F. C. Sheldermine, C.I.E., O.B.E., Director General of Civil Aviation. Mr. J. C. Gibson, of the Air Ministry is secretary to the committee.



FOUR CAUDRON "TYPHONS," of the type shown here, have been ordered by the French Government for experiments with long range, high-speed mail carrying. The cruising speed, with two six-cylinder Renaults driving Ratier V.P. airscrews, is 202 m.p.h.

A FLYING BANK-HOLIDAY

Some Thoughts of Pity for the Earthbound After an Aerial Tour of Southern England Last Week-end

By C. N. COLSON

BANK-HOLIDAYS, especially August Bank - Holiday, are times when the beaches and other pleasure resorts are filled to their limit with people. The people have to get to those places, and last week-end we, my passenger and I, set out to see how they did it; naturally we travelled by air.

My passenger has not flown very much—in fact, she has only been in the air three times previously—so I chose a machine from which she could see easily, which is quiet and vibrationless, which flies safely at incredibly low speeds, although it can cruise at 95 m.p.h., which is draught-free and which was admirable for our meanderings—namely, the latest B.A. "Swallow" (Pobjoy "Cataract" engine).

The result was an entire success. My passenger now thoroughly enjoys flying and is quite convinced that the only way to get out of cities is by air. Moreover, not being in a hurry, we wandered wherever we saw things which might be interesting from above, such as old mansions, early English and Roman remains, castles, cathedrals, and so on, and I was able to prove my contention that no one has really seen the beauty of our old country houses until he or she has looked at them from the air.

Starting from Hanworth Park, we passed close by Brooklands, where they were preparing for the Monday crowds and Mrs. Petre's success. Then, following in a general way down the Portsmouth road, we watched the thousands of motorists passing round the Devil's Punch Bowl, just short of Hindhead; crossed the South Downs at Butser Hill, where the motorists, poor devils, were less than twenty yards apart; and finally glided over Portsdown Hill—making a sympathetic noise at the traffic jams in Purbrook and Cosham—to land for some tea with Messrs. Balfour and Luxmoore, who run the Portsmouth, Southsea and Isle of Wight Aviation Company, on the huge Portsmouth Municipal Airport.

While we were there a steady stream of holiday-makers were leaving for places like Jersey, the Isle of Wight, and Paris, the fast air travel giving them a far longer time for their holidays than if they had gone by any other means.

Our next flight took us north of Winchester by King's Worthy (where a thriving pig breeding industry is growing up to discomfit the Danish importers of bacon), across the wide open areas of Salisbury Plain, with its ancient camp circles and Stonehenge, past Bradford-on-Avon, where the houses are on rock terraces so reminiscent of Italian villages, and into the murk which always seems to surround Bristol. The Airport, a very large and adequate one, with fine new traffic hall and provision for the first Marconi-Adcock D.F. radio station to be used in the provinces, lies only about three



The B.A.
"Swallow"

miles from the centre of the city and very shortly, when a new arterial road is finished, a matter of ten minutes will suffice for the journey between them.

While at Bristol on Saturday we took a trip round Weston-super-Mare and had a look at the new municipal airport site which Mr. Norman Edgar, of Western Airways, Ltd.,

will control. It is a grand site—large, with excellent approaches, and very flat. We went back over Cheddar Gorge, Glastonbury and Wells. The first-named was just one mass of cars and people; a deviation over Yeovil showed us that most of the inhabitants of that rather dirty-looking town seemed to have left for the coast.

On Sunday we cut across country to the south coast and Bourne-mouth. Waffling the "Swallow" along the coast did not make much noise, but we thought the mass of people on all the beaches looked almost like flies on honeyed toast, and we almost expected to disturb them and see them rise in an angry cloud!

It was just the same all the way along to Southampton, where we had a belated but none the less pleasant lunch while we watched the quadrupled Jersey service of D.H.86's plying their holiday trade.

At Brighton

Our evening stop was the new municipal airport of Brighton, Hove and Worthing, where Olley Air Service are already attending to flying people's needs. On the way there we again marvelled at the crowded roads and beaches and blessed the peaceful, comfortable travel our aeroplane was giving us.

Monday we spent on the beach ourselves until the evening, when a delightful flight of half-an-hour took us back to Hanworth Park. The air was still and we were the only users of it—incidentally we saw only one private owner in the air throughout the whole week-end; perhaps they had all gone away abroad!—but, being soft-hearted, we felt that our flight was almost spoilt by the sight of the roads! What a crush! Up through Dorking and Mickleham the cars were nose to tail all the way, and nearer London every road was just solid with traffic. Sandown Park racecourse—what a sight! There must have been a giant's wedding there during the day; the "confetti" covered almost the whole ground!

Finally we floated "Swallow-wise" in every sense, into Hanworth, having covered almost the whole of southern England, in perfect comfort, and with plenty of time to laze; and we had done it in a machine which costs less to run than the majority of motor cars! Of that machine I will say no more, because it was very fully dealt with in *Flight* of May 16, 1935.

A FILM WORTH SEEING

FILMS calculated to appeal only to flying enthusiasts are not yet, unfortunately, a commercial proposition. That being so, we must be thankful for small mercies and to see our screen flying interspersed with manifestations of sex-appeal and "toughness."

Happily, a film occasionally appears in which the flying overshadows the story. Such a film is "Devil Dogs of the Air," now showing at the Regal, Marble Arch, London. We shall ignore the title and the story.

The film deals, mainly, with the work of a flying unit of the U.S. Marine Corps at San Diego, California, and full marks must be given to the aerial photographers associated with its production.

There are exciting training flights in Vought "Corsairs," formation practice, gunnery, and dive bombing with stubby, fascinating little Boeings and manoeuvres with war ships, an airship, smoke screens, and landing parties.

For sheer photographic slickness it would be hard to beat the "shot" of a machine bouncing its wheels on the ground

and "leap-frogging" over an ambulance and that of a squadron of Boeings in echelon taken from a machine at the uppermost end of the formation, with the little biplanes wheeling over into a dive one by one. Then there is a view of a "Corsair" taking off from the "Saratoga." It runs along as far as the bows and disappears over the end. Does it come up? Go along and see for yourselves.

Flexible Glass for Goggles

A REMARKABLE new substance which may be termed "synthetic glass" has been adapted by E. B. Meyrowitz, Ltd., to the manufacture of goggle lenses. These "Mayflex" lenses, as they are known, which can actually be bent without breaking, can be fitted to the No. 6 "Luxor" goggles at a cost of 10s., or the goggles complete can be supplied at 45s., including tan leather case. The address of E. B. Meyrowitz, Ltd., is 1A, Old Bond Street, London, W.1.

COMMERCIAL AVIATION

— AIRLINES — AIRPORTS —



CAIRO "EXPRESS": Misr Airwork's first D.H.86 ("Express") photographed by a "Shell" representative in front of its new quarters at Almaza aerodrome. During its delivery journey Mr. Roderick Denman, a director of Airwork, Ltd., acted as radio operator.

CROYDON

A Hectic Week-end : New Thrills : Empire-building : That Gold Rush

EVERYBODY at Croydon except the aerial holiday-makers is staggering with weariness. All previous Bank Holiday records were eclipsed and almost every service was duplicated on the Friday and Saturday.

Imperial and Sabena, among the big firms, were exceptionally busy, and all the smaller companies were working overtime on special flights to Continental coastal resorts. Pilots did so many trips between places such as Le Zoute or Deauville and Croydon that they scarcely knew which country they were in towards the end of the day, and started demanding cups of tea in the buffet in their best French—which, incidentally, is probably an infringement of an Air Ministry bylaw or likely to upset the licensing laws in some abstruse way.

Imperials, I hear, duplicated their Swiss service on Friday, and on Saturday I saw two Swissair Douglas machines take off one after the other at 2 p.m. At the same time a K.L.M. Douglas departed. On board were Lt. Col. and Mrs. Sheldermine, bound for Scandinavia, and Canon Streeter, leader of the Oxford Group movement.

Olley Air Service has been furiously busy over the holiday period. One day this firm had three specials to Le Touquet, one each to Biarritz, Vichy and Newcastle, and one flight to Deauville.

Fun of the Fair

Acting Capt. Mack, Imperial Airways, had the job one day last week of fetching a public benefactor from Atlantic Park, Southampton, in a Boulton Paul "special." The client was a Blackpool fun-fair king who had been to America to acquire a new and original apparatus for the sudden and violent amusement of His Majesty's liege subjects. They do these things better in the States, and if, next time you are at Blackpool, something snatches you up, shakes you heartily, charges you a shilling and hurls you into an illuminated swim-pool full of rubber sharks, it will probably be the new fun-producing machine.

On Sunday K.L.M. duplicated the 2 p.m. service to accommodate ordinary passengers as well as Major Anson's cricket team (the Harrow Wanderers) which makes a tour in Holland annually, and which always flies there. Major Anson owns an aeroplane of his own, by the way.

Capt. G. F. Thomson, an old friend of ours at Croydon, now Operations Manager of Rhodesia and Nyasaland Airways, a subsidiary of Imperial Airways, has been home to collect a new "Rapide" for his company. He left Croydon on Thursday last with his wife and son as passengers as well as the

son of Sir Herbert Stanley, Governor General of Southern Rhodesia. Young Stanley is at Eton and will return after the holidays by the Imperial regular service. Last week, too, Mr. C. T. Elliot, Headmaster of Eton, together with the Eton Captain of Cricket, left for Rhodesia by the Empire service. Whether this is some Empire building plot, some base attempt to spread the sinister influence of the old school tie, I know not. It is also interesting that a Rhodesian native chief came to Croydon last week and had a flight in a Surrey Flying Services "Dragon," whereupon he rolled his eyes, and afterwards had a look at *Scylla*, and could find no words to express his thoughts, partly, perhaps, because he speaks no English. The deep political significance of all this (if any) is camouflaged by the alleged fact that the Chief is taking part in a film.

On Friday an unfortunate Boy Scout who had been involved in a motor accident when in camp in Holland was brought back on a stretcher by air. The doctor in Holland said that if he was not moved at once he would have to spend three months in hospital there. Boat and train were out of the question, so once again air transport shows its superiority over surface travel.

The recent financial crisis in Holland did K.L.M. a bit of good. Gold valued at about £300,000 was sent by air just before the crisis ended, and instructions followed a day or so later to send it back again, political horizons being clearer. Thus, it never left Croydon Airport, and the Company obtained double freight on it, which, as the K.L.M. manager remarks, is very sound politics.

Provincial Airways, Ltd., during the holiday air travel rush to the Continent, were doing something towards the "see Britain first" campaign. An increasing number of week-end tourists to the West of England use this line, which not only shows them from the air some of the most beautiful country the heart of man could desire, but makes it worth while to travel as far as Penzance for a couple or three days by the Cornish sea.

A. VIATOR.

Croydon-Lille

A DAILY service to Lille, which should cater for the business travel interconnection with the woollen trade, will be run by British Continental Airways from September 1. It is hoped to run two machines each way each day. A D.H.86 for this service will be augmented by the Dragon "Rapides" already running to Belgium.

By Envoy to Paris

A NEW service to Paris has been inaugurated by Portsmouth, Southsea and Isle of Wight Aviation. An Airspeed "Envoy" with a crew of two and accommodation for four passengers leaves Portsmouth daily at noon and arrives at Le Bourget $1\frac{1}{2}$ hours later. In the opposite direction the service leaves Le Bourget at 3 p.m. The fares are £4 15s. od. single, £8 ros. od. return, and £6 15s. od. week-end return. The sea crossing occupies about 48 minutes.

There are a number of connections available with places in the West of England and Midlands. From Penzance, Newquay, Plymouth and Torquay, passengers may travel by Provincial Airways. By Western Airways, Cardiff, Bristol and Bournemouth are served, and Railway Air Services connect with Liverpool, Birmingham and Bristol.

The New Crilly Service

CRILLY Airways opened their new service from Leicester to Liverpool last Thursday, with connections at the Midland end with Nottingham, Northampton and Norwich, and at the Northern end with the north-west coast, Isle of Man and Ireland, through other operating companies.

Civic heads of these towns took part in the inaugural flight from Leicester to Bristol. The party was met by the Lord Mayor of Liverpool and Sir Thomas White, and at the lunch Mr. Crilly announced the establishment of special business vouchers at the rate of £10 ros. for 1,000 miles, transferable to named representatives of any firm. A number of complimentary vouchers has been sent to the Prime Minister and other members of the Government and people in towns covered by the routes. The cost works out at 2½d. per mile, a little more than first class railway fare.

Crillys, who are increasing their fleet with three "Jubilee" Monospars, have reduced their fares. The fleet at present consists of "Dragons."

Mr. Crilly, who, as already reported, is expecting to open up a Lisbon service, is in touch with the American Bellanca people, who are investigating the possibility of a transatlantic service through Liverpool. Midland interests in the new route would be looked after by Crilly Airways.

Heston Happenings

LAST Thursday a well-known Heston concern, Commercial Air Hire, Ltd., put on a most spectacular show at Farnborough with the "Dragon" CCR, which has been the heroine of many of the firm's special adventures.

At 11.30 a.m. to the tick Mr. Pugh landed with a crew of three, including a wireless operator and steward. Also in the machine were three V.A.D. nurses who were to participate in the demonstration of the Flying Department of the Royal Red Cross. At 11.35 a.m. the chairs were all out, and at 11.45 the machine was ready to leave the ground again complete with two stretcher cases, two sitting-up cases, a nurse, and a military doctor.

After a smooth take-off the aerial ambulance flew around for an hour and ten minutes, landing again at 11.55 a.m. By 12 p.m. the machine was empty, the actual time taken to unload the stretcher cases being one minute forty seconds.

The whole performance was then successfully repeated, to the satisfaction of the organisers.

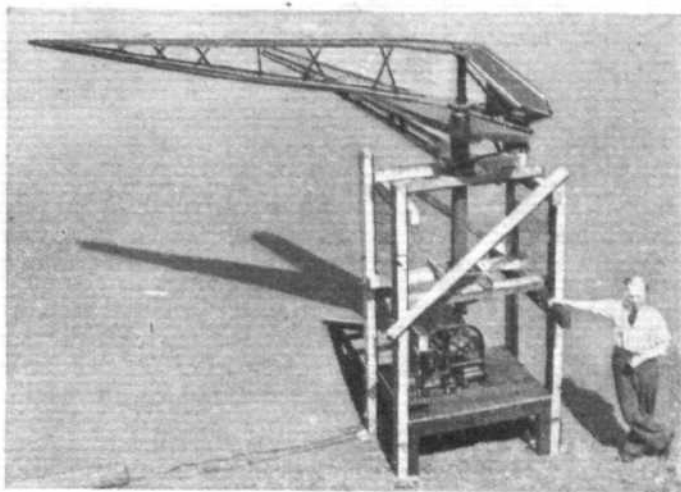
Another machine which took part in the demonstration was the Monospar G-ACTS, flown by Mr. Seth Smith.

Air Dispatch, Ltd., has been forced to run supplementary services to Le Touquet, so heavy have been the bookings to that holiday resort.

The opening of the grouse season also promises much work for the company, special charters having been booked weeks in advance for the rapid transport of slaughtered birds.

Strange cargoes sometimes find their way into aeroplanes. There was great interest at Heston when the Inner Circle machine arrived on one of its trips with two large containers with mysterious rubber bulbs on top. The mystery was solved when dozens of tiny sea-horses were seen swimming happily around in the specially prepared water.

The "ideas" department of Commercial Air Hire has decided that there are many beauty spots in England which should be viewed from the air. They have therefore decided to specialise in aerial cruises, which will start from both Heston and Croydon, carrying parties ranging from two to sixteen passengers. The machines will fly through the Midlands to the West Coast, over Wales and the Cheddar Gorge, through Devonshire and up the South Coast. It is expected that these cruises will appeal largely to visitors from overseas.



The 30 ft. clock, which, as described below, is being installed at the new Rand Airport. It is seen on a test mounting.

Rand Airport Opened

THE new Rand Airport, Johannesburg, was opened on August Bank Holiday by H.E. the Governor-General of South Africa. It is a finely laid-out site, with a central station, hangars, and workshops, full meteorological services, complete night landing equipment, hotel site, and four runways spanning the landing area.

A remarkable feature is the ground-clock, a photograph of which appears above. It was built at the Leicester works of Gent and Co., Ltd., and has a dial diameter of 30 ft. It is of the "Pul-Syn-Etic" type, and the minute hand is 17 ft. long and the hour hand 14 ft. 6 in.; the hands, which are of M.G.7 alloy, are counterbalanced by 200 lb. lead weights. This is believed to be by far the largest electric clock in the world.

Opening-up India

FOR the construction of an up-to-date aerodrome at Sanganer, four miles from the capital, the Jaipur State Council recently sanctioned Rs. 100,000. It also decided to have four landing grounds at various other points in the State territory.

The scheme for the new aerodrome incorporates all the facilities demanded by modern conditions. It has been prepared by Col. P. J. Bowers, the State Engineer.

The preliminary work has already commenced and in all will cost Rs. 60,000. The four landing grounds will each cost Rs. 10,000. It is with the object of facilitating the visits of the State officials to all parts of Jaipur by air that the latter scheme has been devised.

Southampton Busy

TRAFFIC figures at Southampton for July show a steady rise. Passengers in and out for July, 3,738 (June, 2,751); regular commercial machines in, 714 (June, 631); ditto out, 712 (June, 628).

P.S. and I.O.W.A., Ltd., and Spartan Air Lines, Ltd., have found traffic rapidly increasing on the Isle of Wight ferry, and heavy bookings have been made for August, while Railway Air Services' line to Bristol and Liverpool is becoming increasingly popular owing to the great saving in time over rail travel.

Owing to shortage of hangar accommodation another building has now been adapted, providing a further 12,000 square feet, in addition to the 100,000 square feet already available. The new building will be used mainly for the housing of casual aircraft.

Work has commenced on the installation of full night-flying equipment, to include three floodlights, obstruction lights, illuminated wind tee and neon beacon, by Chance Brothers, and boundary lights (illuminated skirt type) by the General Electric Company. It is hoped that this equipment will be available in September.

The R.A.F. has started the erection of the temporary camp for the accommodation of units of the Fleet Air Arm in one corner of the aerodrome, and the first machines are expected in October. The camp will be in occupation for about twenty-six weeks in the year and will at times accommodate four squadrons until the new aerodrome on Thorney Island is completed.

Commercial Aviation

Heston-Manchester Communication

WITH the object of relieving the Heston and Manchester radio stations of the necessity of transmitting route traffic messages by wireless the Air Ministry has installed at Heston a teleprinter connected direct with Manchester station.

Speke's Control Tower

THE lowest of twelve tenders—that of Rimmer Bros., Liverpool, for £11,827—was accepted by the Liverpool Finance Committee on July 26 for the foundation of the administrative building and the completion of the control tower of Liverpool Airport.

Transatlantic

A COMPANY known as the Transatlantic Air Corporation has been registered, "to acquire from the Irish Transatlantic Corporation, Ltd., the benefit of its negotiations, reports and statistics relating to a proposed transatlantic air service, etc." The nominal capital is given as £100 in £1 shares.

Developments in Egypt

MUCH work which will benefit civil aviation is now going ahead in Egypt. At Dekheila, the airport for Alexandria, roadways are being built, a subway approach under the railway adjacent to the airport is nearly completed, a tarmac apron has been laid down in front of the hangars, full lighting equipment is being installed, seven runways covering an area of 200,000 sq. metres have been laid out, and another large hangar will be completed in December. It is hoped that everything will be ready for Imperial Airways to use the airport by the end of this month.

France Tries Its "Comet"

M. JEAN MERMOZ, one of the chief pilots of Air France, who was long identified with the old Aeropostale Company, took off in a D.H. "Comet" from Le Bourget at 9.57 a.m. on Thursday morning and landed at Casablanca at 4.19 p.m. His average speed was about 217 m.p.h. The "Comet" carried no commercial load, but a wireless operator was on board. On Friday morning Mermoz resumed the flight and flew to Dakar, a distance of 1,572 miles, at an average speed of just under 200 m.p.h.

Thus he made the Paris-Dakar trip in less than fifteen hours' flying time, or about one-third the time taken under the present schedules of Air France, using Wibaults and Latecoere 28's.

Municipal Aerodrome Progress

THE Air Ministry has recently issued its quarterly list of municipal aerodrome progress, which classifies towns in Britain under five headings, (a) those which have licensed aerodromes, (b) those which have purchased sites, (c) those which have reserved sites in their planning schemes, (d) those which have had sites inspected, and (e) those which have displayed interest in aerodromes other than the above. The full lists in the first four categories are given below. With the 85 towns in category (e) they make up a grand total of 229. The list is for the quarter ended June 30.

Towns which have licensed aerodromes (Total, 23).—Blackpool, Brighton (with Hove and Worthing), Bristol, Cardiff, Carlisle, Doncaster, Hull, Inverness, Ipswich, Leeds-Bradford, Leicester, Liverpool, Manchester, Norwich, Nottingham, Plymouth, Portsmouth, Renfrew, Rochester, *Scarborough, Southampton, Stoke-on-Trent, Walsall.

Towns which have purchased sites (Total, 5).—Bury St. Edmunds, Hastings, Newcastle-upon-Tyne, Perth, Southport.

Towns which have reserved sites in their Town Planning Schemes (Total, 4).—Blyth, Burton, Rotherham, Skegness.

Towns which have had sites inspected (Total, 108).—Aberdeen, Abergavenny, Aberystwyth, Aldershot, Aylesbury, Barnet, Barnsley, Basingstoke, Bath, Bedford, Belfast, Bexhill, Bideford, Birkenhead, Birmingham, Blackburn, Bognor, Bourne, Bridlington, Burnley, Cambridge, Cheltenham, Chester, Chorley, Colchester, Colwyn Bay, Coventry, Crewe, Cromer, Derby, Dundee, Eastbourne, Edinburgh, Exeter, Falkirk, Gateshead, Glasgow, Gloucester, Grantham, Gt. Yarmouth, Greenock, Grimsby, Guildford, Halifax, Harrogate, Harwich, Hereford, Huddersfield, Huntingdon, Huyton, Ilford, Irvine, Kendal, Kidderminster, King's Lynn, Kingston-on-Thames, Lancaster, Leek, Lincoln, Littlehampton, Loughborough, Lytham St. Anne's, Maidstone, Middlesbrough, Middleton, Morecambe, Motherwell, Newport (Mon.), Newton Abbot, Northam (Devon), Northampton, Oswestry, Oxford, Peterborough, Poole, Preston, Ramsgate, Redditch, Rochdale, St. Albans, Sheffield, Slough, South Shields, Southend, Southwold, Stirling, Stockport, Stratford-upon-Avon, Sunderland, Swansea, Swindon, Taunton, Tynemouth, Walthamstow, Warrington, Warwick, Watford, Wellingborough, West Bromwich, West Hartlepool, Weston-super-Mare, Weymouth, Winchester, Windsor, Woking, Wolverhampton, Worcester, York.

* Licensed for "Private Use" only.

Customs at Plymouth

PLYMOUTH (Roborough) Airport has been approved as a Customs aerodrome, and facilities for the clearance of both passengers and goods are now available. Facilities are not, however, continuously available, and prior notification should be made to the aerodrome control (telephone, Crownhill 349).

A Renfrew Obstruction

IN addition to the two masts notified in Notice to Airmen No. 87 of 1935, a third radio mast has been erected at Renfrew Airport. The new mast, which is 30 ft. in height above ground level, is situated on the high ground in the west corner of the aerodrome and is marked by day with a red-and-white flag and by night with a red obstruction light (oil lamp).

This Air Ministry notification actually means that the long-awaited full D/F radio at Renfrew is now an accomplished fact. Operation began last Monday. The new station provides R/T and W/T on 862 metres, and the hours of service are from 8 a.m. until 9.30 p.m. each day.

The Cardiff Accident

THAT one of the two passengers had asked if it were possible to perform stunts was stated in evidence at the Cardiff inquest on the three men—the pilot, Mr. J. G. Mansfield, and two passengers—who were killed when a Western Airways "Dragon" crashed in the mud of the Bristol Channel on July 22. After a lengthy discussion with an expert witness—Mr. W. N. L. Cope, flying instructor at the Cardiff Club—as to what did or did not constitute a dangerous manoeuvre in a machine of this type, the coroner adjourned the inquest until September 2, by which time the Air Ministry enquiry would be completed.

Service at Croydon

AT the present time Rollason's shops at Croydon airport are very full with repair work and C. of A. overhauls. Mr. H. A. Leggett, late of Imperial Airways, has taken charge of the engine-overhaul shop, and all jobs are going through with a minimum of delay. Rollason's have recently supplied another "Dragon Rapide" to British Continental Airways, Ltd., and will be delivering a four-engined D.H.86 to the same firm in about three weeks' time.

Mr. Rollason, incidentally, together with Mrs. Rollason, family, and nurse, left last week (by British Continental Airways) for Belgium, where they are spending a short holiday.

New Zealand News

FIVE Boeing 40 H.4 biplanes have been shipped from Vancouver to the order of N.Z. Airways, Ltd., of Timaru.

Owing to the Transport Co-ordination Board having refused the company's application for a trunk air service licence, and no decision having yet been reached as to their application for an Auckland-Gisborne service, it is more than probable the Boeings will be used for air taxi work.

Accommodation is provided for four passengers and light luggage.

Forward of the cabin is a mail and freight compartment capable of taking up to 550 lb. of mail.

The Pratt and Whitney "Hornet" engine gives a top speed of 130 m.p.h. in the standard model, but by certain streamlining modifications the Company expects to bring this maximum up to about 150 m.p.h.

Captain H. M. Talbot-Lehmann is chief pilot and technical adviser to N.Z. Airways, Ltd.

A movement is on foot to form a Guild of Air Pilots in New Zealand.

Captain Stedman, of the Rongotai Aerodrome, Wellington, has been asked to organise the movement, and the following preliminary qualifications are suggested for membership:—

Air Master.—6,000 hours, covering twelve types of aircraft, including flying boats. Must also have 2nd-Class Navigator's and Wireless tickets.

Air Chief Officer.—2,500 hours, 2nd-Class Navigator's and Wireless tickets.

Air Officer.—500 hours. Provision is made for Blind Flying by 1940.

Owing to the smallness of the country and consequently short flights, it has been deemed advisable to reduce the number of flying hours somewhat, hence 6,000 hours instead of 10,000 for an Air Master's certificate.

As soon as everything is in going order, affiliation will be sought with the Guild in England.

Headquarters for New Zealand will be in Wellington.

MODELS

Realism in a Petrol-driven Model : A Practical Kit: News from the Clubs

A Remarkable Effort

THE remarkable petrol-engined model of a Percival "Gull" illustrated on this page is the work of Mr. A. E. Morrod, of the Standard Wing, Warwickshire Model Aero Club.

Actually, it is not absolutely to scale, certain departures being necessary to obtain a good flying performance. The span is 7ft. 8in. and overall length 5ft. 3½in. Birch is employed for longerons, wing spars, leading and trailing edges, internal bracing, etc.; balsa for the cabin and parts of the tail unit; ⅛in. three-ply for the fuselage formers and wing ribs (Clark Y section); and ½in. three-ply, covered on the forward side with aluminium, for the engine bulkhead.

The split undercarriage—the most noticeable departure in design from the original—has duralumin legs and 3in. Dunlop tyres.

A Jap silk covering is used; the main and tail surfaces were given one coat of pure full-strength dope and one coat of half-strength with aluminium paint. The fuselage was given two coats of full-strength dope mixed with yellow aniline dye.

The power unit is a 15 c.c. "Greyspec" two-stroke, and two ounces of fuel are carried. A switch in the instrument board controls a four-volt ignition battery carried in the tail, and a two-pin socket in the side of the fuselage enables a separate battery to be used for running-up the engine.

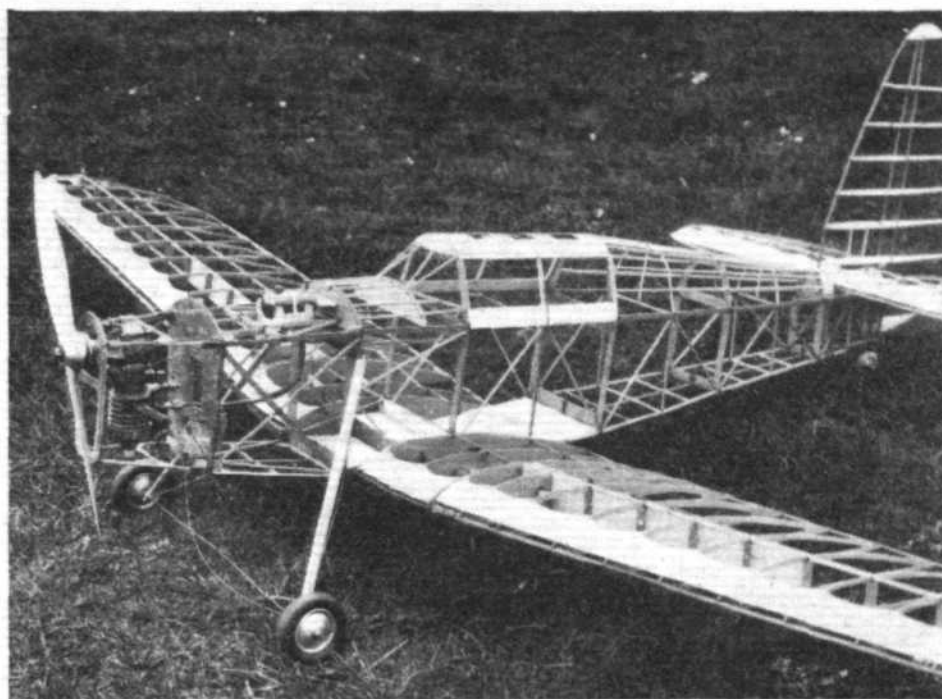
Uncovered, the "Gull" weighs 4½ lb. Covered, and complete with coil and battery, it scales 6½ lb.

At the time of writing the machine has not flown, but its constructor is, we believe, confident of satisfactory results. He certainly deserves them.

A Practical Kit

PRODUCED by F. R. Barnard, Premier Aeromodel Supplies, of 2a, Hornsey Rise, London, N.19, the "Premier 25" constructional kit should make a special appeal to those without a great deal of experience, principally on account of the very complete instructions provided, the completeness of the kit, and the very robust nature of the machine.

The "Premier 25" is a sesquiplane (i.e., a biplane with very small lower wings) and has been designed as a "general-purpose" model; the average duration given by the rubber motor is 35 to 45 sec. A new medium, bamboo paper, is employed for covering; this is easier than silk for the comparative novice to apply, takes a high finish, and will stand a great deal of rough treatment. A most ingenious system of wing fixing and strutting is used, which, while extremely rigid in flight, makes structural breakage in a crash very unlikely. A special effort has been made to keep the machine



Mr. A. E. Morrod's Percival "Gull" without its fabric.

compact for transport to flying grounds when "taken down." The span is 43in., length 27in., weight 8 oz., and the kit of 45 items, with blue print and instructions, costs £1 1s.

National Cup Contest

THE National Cup Contest for the S.M.A.E. Cup, the basis of which was the average duration of three rise-off-ground flights, took place at Fairey's Great West aerodrome last Sunday. There were twenty starters, representing seven clubs.

The cup was won by Mr. J. Worden, of T.M.A.C., with an average of 1 min. 37.21 sec. Mr. P. L. Wilson (S.M.A.E.) came second with 1 min. 24.17 sec., and Mr. G. J. Liggitt (T.M.A.C.) averaged 1 min. 13.58 sec.

Contest Alteration

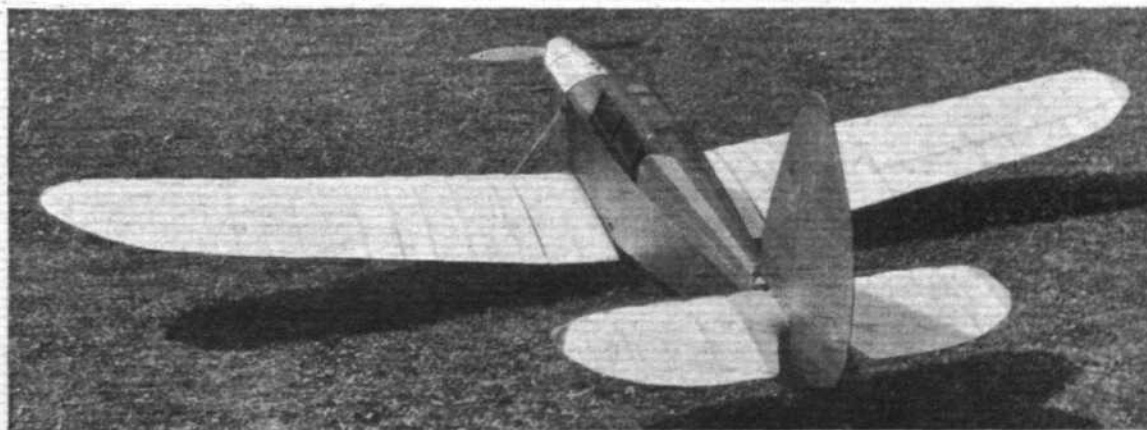
THE date for the S.M.A.E. Speed Contest has been advanced to August 18, to enable it to be held on a private ground which has been secured. Intending competitors are asked to communicate immediately with the competition secretary, Mr. S. G. Mullins, 19, Lorne Avenue, Shirley, Croydon.

The many youthful enthusiasts who build "Skybird" models will be interested in a models competition, with many prizes, which is being organised by the makers, A. J. Holladay and Co., Ltd., 3, Aldermanbury Avenue, London, E.C.2.

Mr. C. A. Rippon, hon. chairman of the Northern Heights M.F.C., reminds competitors that entries in the Club's snapshot competition must reach him at 70, Hampden Way, London, N.14, by August 31.

Suggestions made by William Ellis and Co., Ltd. (builders of the "Welcom" aircraft models), for the organisation of national competitions for constructional and flying-model aircraft have, it is stated, been adopted by the Air League.

The "Gull" in its finished state. The span is 7ft. 8in., length 5ft. 3½in. and weight with coil and battery, 6½ lb. The engine is a 15 c.c. two-stroke.



THE INDUSTRY

Brakes for Light Aircraft

AN extremely light, simple and inexpensive braking system has been evolved for light and medium-sized aeroplanes by the Dunlop Company. In contrast to the well-known Dunlop pneumatic system for larger types of aircraft, the new system operates hydraulically. The method is very straightforward.

As the illustrations show, a small hydraulic motor or pump is attached to each end of the rudder bar, and is provided with a footrest for normal operation of the bar; the brakes are applied by movement of the toe pedals. Equal pressure on each pedal gives uniform braking on each wheel. Differential braking is obtained by application of either pedal as required, since the port and starboard systems are entirely separate and self-contained.

For parking purposes there is a valve, operated by a small pedal, which, when the brakes are applied, at once closes the feed lines and causes the brakes to remain locked.

The wheel brake unit is similar in general principle to the Dunlop pneumatic unit, the brake locks in the drum being applied by expansion of an annular chamber, which in this instance is filled with the special hydraulic fluid instead of with air.

Further details are obtainable from the Aviation Department of the Dunlop Rubber Co., Ltd., Fort Dunlop, Birmingham.

Aircraft Steel Data

BBROWN Bros. have just issued an unusually informative booklet which gives micro-photographs, analysis, physical tests, specification and stock sizes of all their wide range of aircraft steels.

About Magnesium Alloys

SSOME extremely informative data sheets are being produced by Magnesium Castings and Products, Ltd., 77-78, Buckingham Avenue, Trading Estate, Slough, Bucks. Sheet No. 1 deals with the characteristics of Magnesium 177 and 220 sand- and die-casting alloys.

A Welcome Recovery

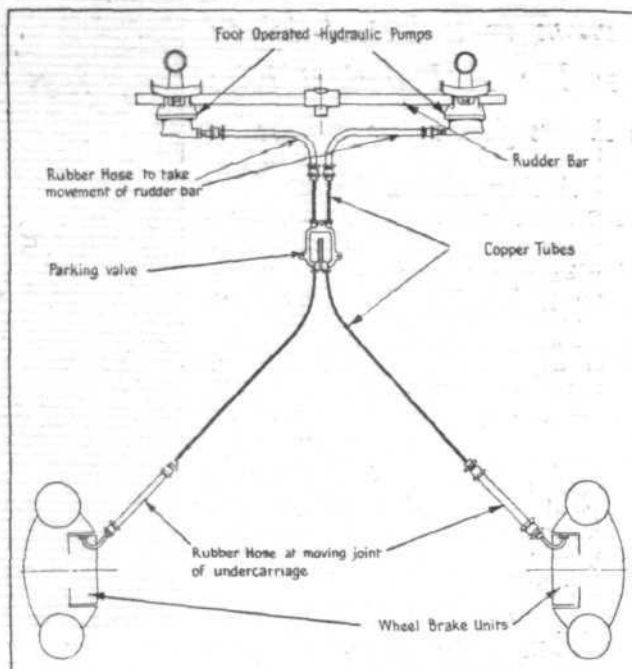
MMR. DAVID LLEWELLYN, a director of Aircraft Exchange and Mart, Ltd., was injured rather badly sometime back when making a forced landing at night. His many friends will be glad to hear that he has now completely recovered and is back at Hanworth instructing.

Uses of Copper

CCOPPER is used in a variety of forms in the construction of aeroplanes and aero engines. Designers and manufacturers will be interested in the booklet which has been issued by the Copper Development Association, Thames House, Millbank, London, S.W.1. This contains all the data which the ordinary user is likely to need.

Cylinder-wear Minimisation

NOW being marketed by Alexander Duckham and Co., Ltd., "Wear-Cure" tablets, it is claimed, very greatly reduce cylinder wear in internal combustion engines. In tests made by the Institution of Automobile Engineers a reduction of



The general layout of the Dunlop braking system for light aircraft.

34 per cent. in wear was found. The tablets, which are simply dropped into the petrol tank, contain the same corrosion inhibitor as does Duckham's Aero N.P. lubricating oil, and are said to have especial value during the running-in period.

NEW COMPANIES

RAMSGATE AIRPORT, LTD. was registered as a "private" company on July 20, with a nominal capital of £5,000 in £1 shares. The objects are to carry on the business of proprietors and managers of airports or aerodromes in any part of the world, etc. The first directors are: Whitney Straight and others to be appointed by the subscribers. Solicitors: McKenna & Co., 31/4, Basinghall Street, London, E.C.2.

AERIAL SITES, LTD.—"Private" company, registered July 29. Capital: £6,000 in £1 shares. Objects: to carry on the business of advertising in any manner, particularly by the use of aircraft. Directors: Leonard Murphy, Alex. R. Rangabe, Walter L. Hope (director of Air Taxis Ltd.). Registered office: Airport of London, Croydon, Surrey.

BRITISH BELLANCA AIRCRAFT COMPANY, LIMITED.—Registered as a "private" company on July 29. Nominal capital: £100 in £1 shares. Objects: to manufacture and deal in aircraft. Directors: Richard R. Gordon-Barrett, Randall J. O. Perry. Registered office: 115, High Holborn, London, W.C.1.

ODDIE, BRADBURY AND CULL, LIMITED.—"Private" company. Registered July 26. Capital £10,000 in £1 shares. Objects: to acquire the business of Oddie, Bradbury and Cull now carried on by Fred A. Oddie, John Bradbury and Edward C. Cull, at Southampton Aerodrome, Hants, and to carry on the business of aircraft engineers, manufacturers, etc. Directors: Fred A. Oddie, John Bradbury, Edward C. Cull. Registered office: Southampton Municipal Airport, Southampton.

AERONAUTICAL PATENT SPECIFICATIONS

(The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

(Published August 1, 1935.)

- 27471. BENDIX AVIATION CORPORATION: Piloting controls for aircraft (431,328).
- 28102. Soc. DU CARBURATEUR STRATOS: Automatic control of the power output of aircraft engines (431,243).
- 31786. LE CLEZIO, L.: Reciprocating-blade propeller or impeller, particularly for use on ships, aeroplanes and pumps and compressors and like apparatus (431,442).
- 7432. BARNWELL, F. S. and BRISTOL AEROPLANE CO., LTD.: Gun-mountings for aircraft (431,326).

(Published August 8, 1935.)

- 35197. SIMMONDS, O. E., and SIMMONDS AEROCESORIES, LTD.: Flexible cable and the like transmission devices (431,515).
- 1193. BAYNES, L. E.: Control mechanism for aeroplanes (431,648).
- 3019. CARINGTON, C. M., and K.L.G. SPARKING PLUGS, LTD.: Sparking plugs (431,527).
- 3848. BOULTON PAUL, LTD., NORTH, J. D., HUGHES, H. A., and DOE, A.: Method for the supply of fluid under pressure and/or electric power to the interior of rotating structures such as gun turrets (431,714).
- 3850. BOULTON PAUL, LTD., NORTH, J. D., HUGHES, H. A., and DOE, A.: Form of gun mounting (431,715).
- 4174. BOULTON PAUL, LTD., NORTH, J. D., HUGHES, H. A., and DOE, A.: Rotatable gun turrets (431,717).
- 10019. DUNCANSON, F.: Wing structures for aircraft (431,565).
- 30725. MEZZATESTA, G.: Airship speed-indicators (431,752).
- 34570. SHORT BROS. (ROCHESTER AND BEDFORD), LTD., and PARKER, H.G.: Gun turrets for aircraft (431,550).
- 538. CARINGTON, C. M., and K.L.G. SPARKING PLUGS, LTD.: Sparking plugs (431,553).
- 10789. STEVENS, G. A.: Means for propelling vehicles, particularly aircraft (431,512).